DOCUMENT RESUME

ED 291 431 JC 880 086

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TITLE Introduction to Microcomputers: A Competency-Based Approach. Instructor's Manual, Self-Paced Study Guide, and Student Exercise Manual.
INSTITUTION Delaware County Community Coll., Media, Pa.
SPONS AGENCY University City Science Center, Philadelphia, Pa.
PUB DATE 86
NOTE 168p.; Additional funding provided by the Delaware County Community College Educational Foundation, the Ethel Sergeant Clark Smith Memorial Fund, and IBM Corporation.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052) -- Guides - Classroom Use - Materials (For Learner) (051)

EDRS PRICE MF01/PC07 Plus Postage.
DESCRIPTORS Community Colleges; *Computer Literacy; *Computer Science Education; *Computer Software; *Microcomputers; *Programing Languages; Teaching Guides; Two Year Colleges; Workbooks

ABSTRACT

Delaware County Community College's (DCCC's) course, "Introduction to Microcomputers," was designed to develop the basic level of computer competency necessary to enter the college's microcomputer technology programs. Three manuals were developed for the course: an instructor's manual, a self-paced study guide for students, and a student exercise manual. The instructor's manual presents notes for the teacher along with the corresponding pages of the student exercise manual. Both the instructor and student manuals cover the following topics: group introductions, course goals, the IBM PC keyboard, care of diskettes, the functional structure of computers, software, the evolution of computers, computer categories, the operating system, home activity, disk operating system commands, telecommunications, DCCC's lab network, spreadsheets, database programs, mainframe computers, programming languages, sample programs, and printer styles. The self-paced study guide offers a list of materials in several modes (i.e., required and alternative texts, software, audiotapes, videotapes, and slides) that can be used to develop specific computer competencies. (UCM)

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INTRODUCTION TO MICROCOMPUTERS: A COMPETENCY-BASED APPROACH. Instructor's Manual, Self Paced Study Guide, and Student Exercise Manual.

DEVELOPERS (listed alphabetically):

Joseph Galese
Alexis Hillman
Linda Oken
William Snyder

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(215) 359-5093

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INSTRUCTOR'S MANUAL

for

INTRODUCTION TO MICROCOMPUTERS:

A COMPETENCY-BASED APPROACH

DEVELOPERS (listed alphabetically) :

by Joseph Galese, Alexis Hillman, Linda Oken and William Snyder

PROJECT DIRECTOR: Thomas Lutz

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NOTE TO THE INSTRUCTOR

This program is aimed at people who have had little or no previous experience working with computers, and places a strong emphasis on hands-on activities for the participants. The student works alone at the computer during the first exercise. In the second and fifth exercise, the student creates a memo which is saved on disk and printed.

The developers of this program want this memo be used as a frequent example throughout the course. The memo is input at the keyboard, it is displayed on the monitor, stored on the disk, printed on the printer, copied using DOS, and so on. The student will have a real item--the memo--on which to base an understanding of more abstract concepts involved in learning about computers. Copying a file using DOS is much easier to understand for someone who knows what is in that file. Someone with experience using a computer can grasp the concepts of input, process, storage and output more easily.

In the instructor's manual, the instructor's notes are on the left leaf, and the student's workbook page is on the right leaf. All page numbers refer to the student's pages. Time allotments for each unit will of course vary depending on credit vs. non-credit mode. Credit instructors should track start and end times and probably increase indicated time allotments. Occasionally, student directions must be updated or supplemented because we have new software versions or the software is available by disk only or network only. Be sure to contact the Computer Lab or Media Services beforehand for all materials needed, and to learn about changes in any procedures.

For review of content on any of the topics, we suggest that you consult Understanding and Using Microcomputers by Zimmerman and Conrad--or a similar recent publication--and many audio, video, and software tutorials purchased for this project.

*Note: A Ben Franklin Partnership grant authorized a study to design this introductory program of instruction in computer competence. This program is designed to updrade the skills necessary to enter our microcomputer technology programs such as computer-aided drafting and design, computer-aided manufacturing, word processing, data processing, graphic arts, and business/industry training.

Our goal is to enable students who enter programs which use a computer to first acquire a basic level of competency so they can concentrate on the specific skills relevant to their chosen field.

INSTRUCTOR NEEDS TO BRING

	Session #		
------- Tent Cards for Names	-------	-------	-------
------- Instructor's Disk	-------	-------	-------
------- Exploring the IBM PC Disks	-------	-------	-------
------- Student Exercise Disks	-------	-------	-------
------- WordStar Disks	-------	-------	-------
------- DOS Disks	-------	-------	-------
------- IBM Videotape: 10 Lessons	-------	-------	-------
------- Slides	-------	-------	-------
------- Blank Disks	-------	-------	-------
------- Networking Disks	-------	-------	-------
------- InSearch Disks	-------	-------	-------
------- Database Demo Disks	-------	-------	-------
------- A damaged disk	-------	-------	-------
------- Student Workbooks			

INSTRUCTOR'S OUTLINE

Outline & Time	STEPS	Materials
Group Introductions		
:20	Instructor introduce self and course goals (be BRIEF)	Tent cards for names
	Instructor's choice of participant introduction	Page 2
Start -------		
End -------	Suggestion: Go around room. Each person say name and one of following:	
	-- I am taking this class because	
	-- One thing I hope to learn in this class is	
	Objective: Reduce anxiety about computers	
	Suggestion: Relate an appropriate incident that illustrates instructor's own early anxiety about computers.	
	OR mention bank, department store, bank card (etc.) foul up related to computer billing.	

INTRODUCTION

Welcome to the program entitled: Introduction to Microcomputers--a Competency-based Approach. In this program you will be given an opportunity to overcome much of the anxiety you may have about computers. During this program you will:

- become familiar with computer terminology
- learn to use the computer's keyboard and equipment
- learn to handle diskettes
- compose and print memos
- use a mainframe computer
- use an operating system
- explore the programming process
- recognize software uses
- explore applications

You are encouraged to follow the attached outline or agenda. Should any questions occur to you, please be sure to bring them up during or after class.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Overview of Course Goals	Introduce workbook.	Introduction
:10	Point out and review outline on page 3	Page 3

Start _____

End _____

CONTENTS

Title	Page
Group Introductions	2
Course Goals	2
Contents	3
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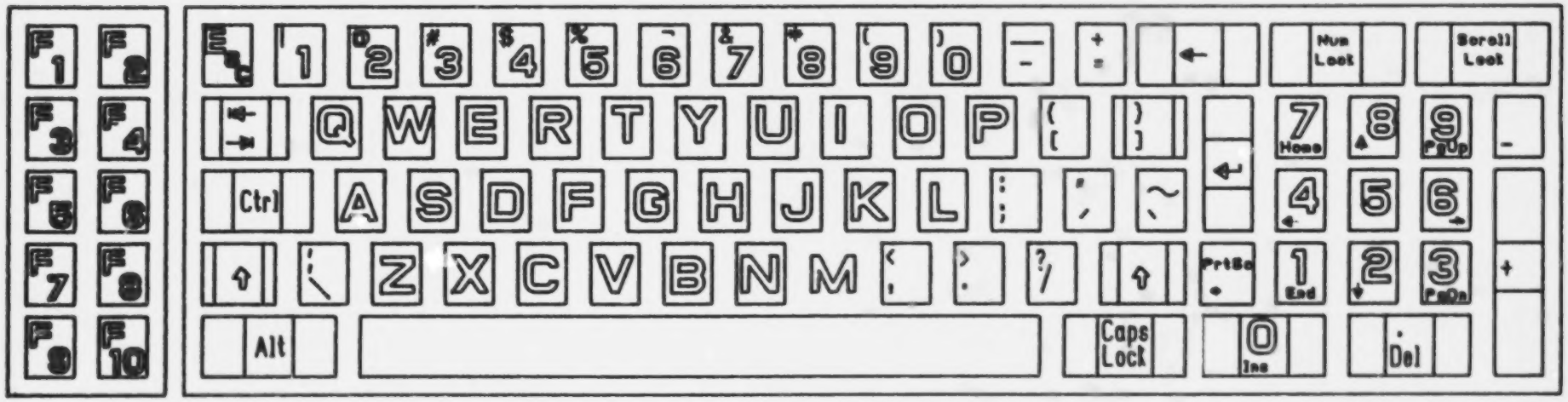
INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Focus on Keyboard and Disk handling - part 1 :40 Start _____ End _____	Refer to keyboard layout. Point out following keys: Shift Control Return (Enter) Escape Backspace Objectives: Understand the location and function of these 5 keys Understand how to use each key Primary method of input from human to micro is through keyboard. Many keyboard designs but most like typewriter with numeric keypad & function keys. Most common is QUERTY: look at letters on top row of your keyboard.	Keyboard Layout Page 4 Zimmerman: p. 14,42,101

* * * Continued on next page

IBM-PC KEYBOARD

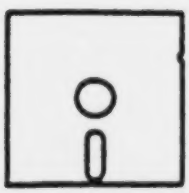


INSTRUCTOR'S OUTLINE

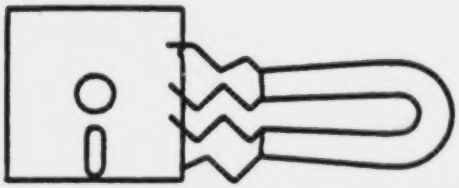
Outline & Time	STEPS	Materials
Focus on Keyboard and	Instructions for proper disk handling:	
Disk handling - part 1 -- CONTINUED	Refer to Illustration page 5: Care of Diskettes.	Page 5
	No food, drink or smoking around diskette.	Zimmerman: p. 50-56
End _____	Avoid magnetic fields such as paper clip holders, telephones and electronic devices.	
	Do not touch open area of diskette.	
	Do not bend or fold. Brace with hard cardboard if carrying a single disk.	
	Write on label with felt tip pen only.	
	Do not place heavy loads on top of diskettes.	
	Note temperature limits for operating and storage. Caution about storage.	
	Best bet about disk handling: always hold diskette with thumb on label.	
	To insert diskettes into the disk drives on these computers, place disk label side up into disk drive. Push disk gently to make sure it is all the way in. Close disk drive door.	

* * * Continued on next page

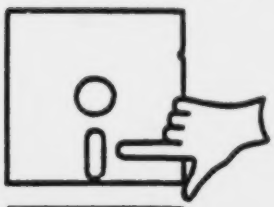
CARE OF DISKETTES



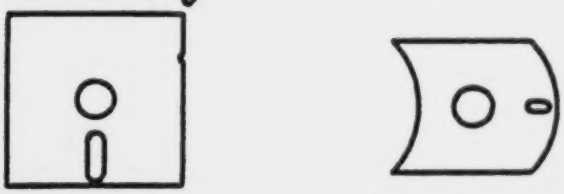
NO FOOD,DRINK, or SMOKING AROUND DISKETTE



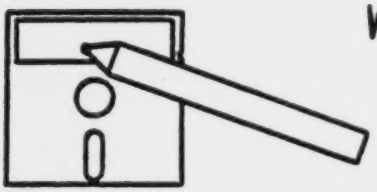
AVOID MAGNETIC FIELDS SUCH AS PAPERCLIP HOLDERS, TELEPHONES, AND ELECTRONIC DEVICES



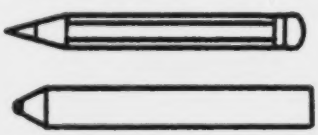
DO NOT TOUCH THIS AREA



DO NOT BEND

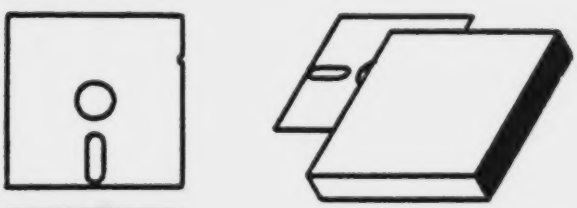


WRITE WITH FELT TIP-ONLY

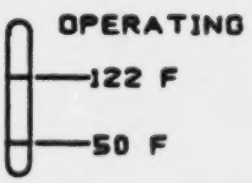


NO PENCIL

NO PEN



NO HEAVY LOAD



INSTRUCTOR'S OUTLINE

Outline & Time	STEPS	Materials
Exercise 1	Students work on their own on Exercise 1 - Keyboarding & Disk Handling.	Exploring the IBM PC Disk
Focus on Keyboarding/Disk Handling CONTINUED		Exercise 1 Page 6
	Note: Student's book uses directions for disk version. If using the network, type PCDEMO at prompt. Prefer disk version.	
:30		
Start _____		
End _____		

EXERCISE 1

KEYBOARDING/DISK HANDLING

DO NOT PROCEED UNTIL YOU READ THESE DIRECTIONS COMPLETELY!!

Using the diskette entitled "Exploring the IBM PC" you will learn about the IBM PC Keyboard.

_____ Step 1 - With the computer off, insert the diskette label side up into the left-hand drive by holding it in your hand with your thumb on the label. Close the disk drive door after inserting the diskette.

_____ Step 2 - Turn the computer on (back right side). Turn the monitor on (front top dial on the monitor).

_____ Step 3 - Wait a minute or so.

_____ Step 4 - Follow the instructions as they come up on the screen.

_____ Step 5 - Stop after reaching the end of Chapter III.

NOW YOU MAY PROCEED.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Exercise 2 **Write a Memo** :45 Start _____ End _____	Review of special keys: Shift Control Return (Enter) Escape Backspace Introduce Exercise 2 - Memo Like typing--free of word processingstructure. Instructor has opportunity to review student background and needs. Student work on their own. *Note: In most classes, students must bring a blank diskette to class. Instructor should collect before class & have Computer Lab DISKCOPY each from the Student exercise disk Master. This should be done before proceeding with Exercise 2. In some seminars the disk is provided.	Student Exercise Disk (Keybd) MEMO Page 7

* * * Continued on next page

EXERCISE 2

MEMO

IMPORTANT - READ THROUGH ITEMS 1 - 3 BEFORE DOING ANYTHING!!

_____ Step 1 - Start with your computer off. With your thumb on the label, take the Student Exercise disk out of the paper jacket and place the disk (label up) into the left disk drive. Close the disk drive door.

_____ Step 2 - Turn on your computer and monitor. Wait for the computer to start up.

Now follow the instructions as they appear on the screen.

Here are some helpful hints:

- when you need to go to the next line, press the <RETURN> key
- to make a capital letter, hold down one of the <SHIFT> keys and press the letter you want. The <SHIFT> key is marked ↑. If you make a typo, use the gray ← key to back up, then type the correction.

_____ Step 3 - Now you may begin typing the following short note to your instructor. Fill in the blanks of the Memo as you wish. You may wish to compose your responses on the paper copy of Exercise 2 before typing them on the computer. Don't worry about mistakes at this time...just go ahead and get used to the keyboard.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Write a Memo . . . CONTINUED	While students are working on Memo, help those who get stuck	Manual Page 7-8
End _____	When student reaches page 8, instructor must check that printer is connected and turned on, paper loaded, etc. before student may proceed to print.	

TYPE THIS

- -

To: (Instructor's Name)

From: (Your name)

I am taking this class because _____. One thing I really want to learn about is _____.

This is about the _____time I have ever used a computer by myself.

In general, I think computers are _____. Having a computer available to me would _____. If I were to use a computer in my work, _____.

I think that doing this memo has been _____.

- -

NOW SAVE AND PRINT YOUR MEMO ACCORDING TO THE FOLLOWING INSTRUCTIONS:

_____ Stepl - Press F6 and <RETURN> at the end.

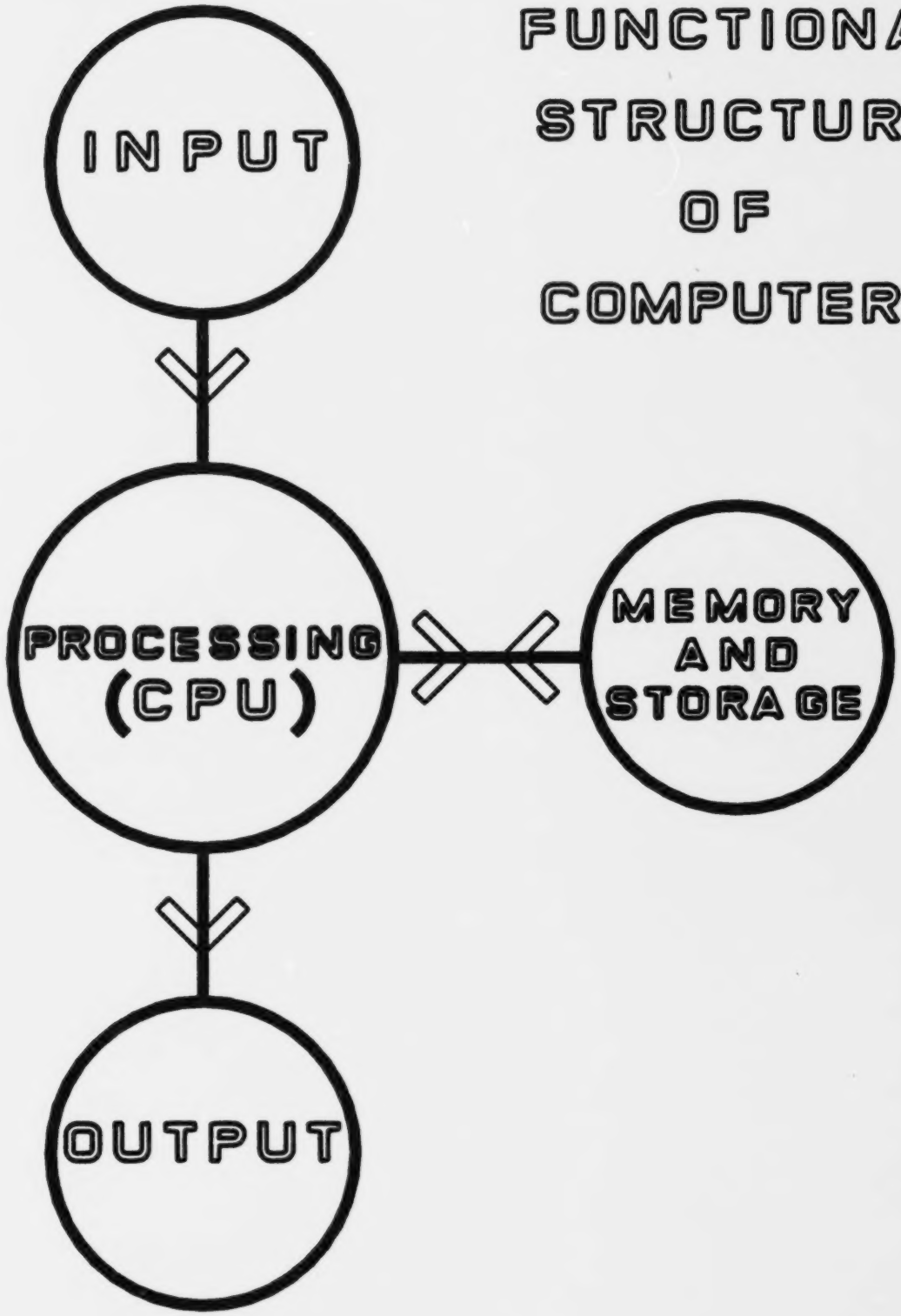
_____ Step 2 - Follow the instructions on the screen. We want you to print out two copies of your memo -- one for yourself, and one for the instructor.

BEFORE PRINTING ON, CHECK WITH YOUR INSTRUCTOR TO BE SURE YOUR COMPUTER IS CONNECTED TO A PRINTER. IF NOT, WAIT UNTIL IT IS CONNECTED.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Functional Structureof Computers	Topics to be included:	Manual: Functional Structure of Computers il. Page 9
:20 Start _____	Define the term system -- the organization of elements to accomplish a pre-defined goal. Relate to computer system: Hardware/software/user.	
End _____	Computers are designed to perform four major functions Input Process Storage Output	Zimmerman: Chap. 2 p. 12-18, 32-64
	Information feedback cycle: data, information, decision, action.	
	Identify computer components and which function each component performs	
	Define operational and physical compatibility. Differentiate between direct disk reading/writing and transfer of data files.	
Exercise 3 Function of Computer Components	Students do exercise 3 on their own	Function of Computer Components Page 10

FUNCTIONAL STRUCTURE OF COMPUTERS



INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
	Use hardware in microcomputer lab for reference.	
Physical System Configuration	Show IBM videotape, Chapts 2 & 3 only. Pause tape to show components and discuss.	IBM Videotape (Chapter 2 & 3 only--20 min)
:45	For each component, describe -- what it is -- what it does -- how it works	
Start _____	INPUT: Keyboard - press keys (example, we entered the text of the MEMO)	Zimmerman: Chap 2 p. 32-64
End _____	Mouse - move and click	
	Ask class for other examples of input devices (eg. grocery store UPC readers)	
	PROCESS: CPU microprocessor RAM (volatile memory discussed on videotape)	
	STORAGE: disk drives (MEMO is stored on the disk) drives also input/output	
	OUTPUT: Monitor, printer (MEMO was displayed on the screen, printed on the printer.)	
	Ask class for other examples of output (eg. sound).	

Exercise 4
Connecting Microcomputer Hardware

Students do exercise 4

Page 10

EXERCISE 3

FUNCTION OF COMPUTER COMPONENTS

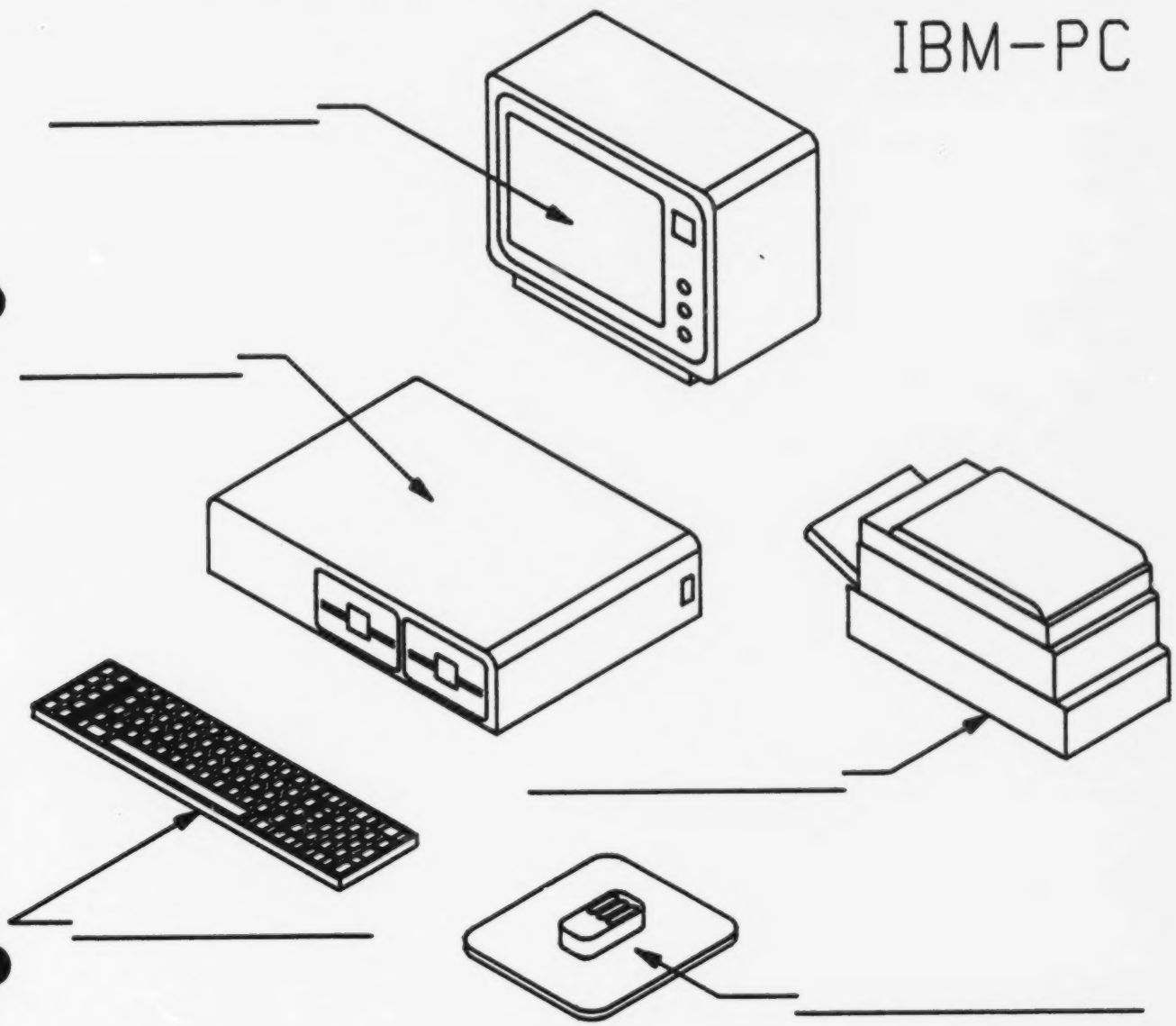
_____ Step 1 - Label the parts of this computer system.

_____ Step 2 - Now identify functions such as: input, output, processing, memory and auxiliary storage.

EXERCISE 4

CONNECTING MICROCOMPUTER HARDWARE

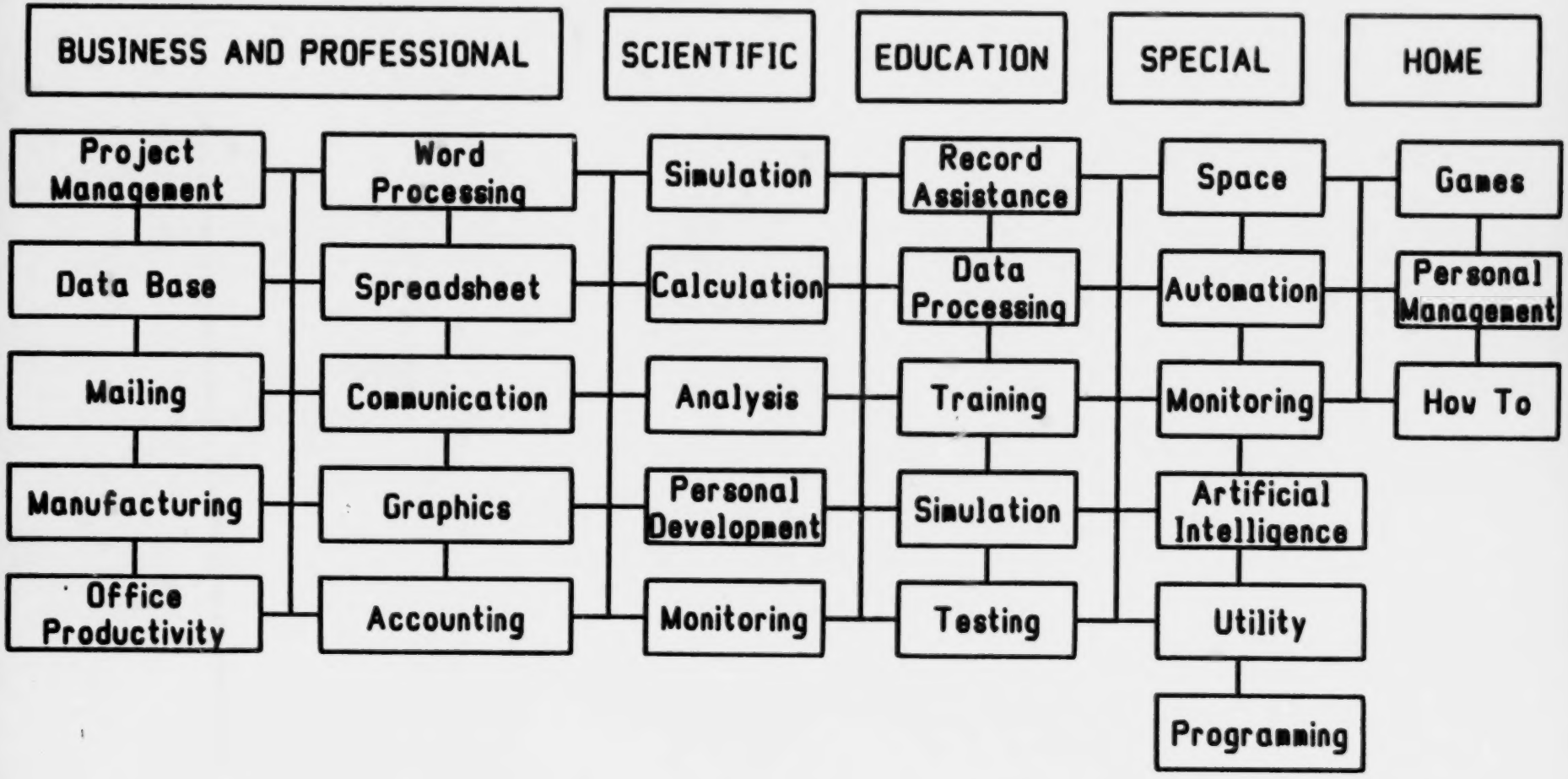
Using the parts of this simple microcomputer system, connect the components using lines to represent the connector cables.



INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Overview of Applications Software Part 1 :25 Start _____ End _____	Distinguish between hardware and software. Hardware: physical parts of the computer system (suggestion - knock on monitor with knuckles). Software: instructions to the computer that tell it how to perform a specific task. Refer to chart on Page 11, Software Overview. What kinds of tasks? Explain software types: (headings on chart). Business & Professional, Scientific, Education, Special, Home. Describe specific software uses: o Word Processing: create & edit documents o Spreadsheet: rows & columns; numbers & formulas o Data Base: files of related information like index card box or filing cabinet o Graphics: charts & diagrams o Integrated: combined o Educational: teach math skills, reading o Games: !! o Simulation: flight training Mention popular software products for each.	Manual Page 11. Zimmerman: p. 3-9.

SOFTWARE OVERVIEW



INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Word processing Software Overview :10 Start _____ End _____	Demo of common WP features: Insert, delete, change margins, block move, search and replace, Instructor's choice Suggestion: Do the steps of exercise 5 as the demo	Video projection using Wordstar & demo document Instructor's disk Zimmerman: Chap 4. p. 92-124.

Exercise 5 :50 Start _____ End _____	Remind use of special keys Shift Control Return (Enter) Escape Backspace When student is ready to print, instructor must check that printer is connected and turned on, paper loaded, etc. before student may proceed to print.	WordStar Disks Student Exercis Disks Exercise 5 Page 12 - 14

EXERCISE 5

WORD PROCESSING EXERCISE USING WORDSTAR

PLEASE READ THROUGH THE INSTRUCTIONS FIRST BEFORE ACTUALLY DOING ANYTHING ON THE COMPUTER!!!

_____ Step 1 - Before doing anything, start with your computer off. Then you will put either the Networking or WordStar system disk in the left-hand disk drive and you will put a Student Exercise disk in the right-hand disk drive.

_____ Step 2 - Turn on the computer and monitor. At A> type WS and then press <RETURN>. Then at the "OPENING MENU" type L the command to change the logged disk drive. Then type B: and press the <RETURN> key to activate the B drive.

_____ Step 3 - Next type D to open the document file. At the prompt "Name of File to Edit?" type MEMO and press the <RETURN> key.

_____ Step 4 - Now you are going to type a Memo to your instructor that you will be able to edit using the sophisticated editing features of a word processing package. Type the same note to your instructor that you typed earlier, but this time you will not need to press <RETURN> at the end of each line. This time allow the computer to decide when to break the line...this feature is called Word Wrap.

Also, using the cursor movement keys you will be able to move up and down and left and right on a line in a document.

Here are some helpful hints to move the cursor around and edit your copy:

Cursor Movement

a.	Right one character	..... <CTRL> D or	→
b.	Left one character	..... <CTRL> S or	←
c.	Up one line	..... <CTRL> E or	↑
d.	Down one line	..... <CTRL> X or	↓
e.	Top of Document	..... <CTRL> QR or F9	
f.	Bottom of document	..... <CTRL> QC or F10	

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials

This page intentionally left blank

Deletions

a. Character under cursor ..... <CTRL> G
b. Character left of cursor..... <DEL>
c. Word to right of cursor ..... <CTRL> T
d. Entire line ..... <CTRL> Y

Insert on and off ..... <CTRL> V or <INS> key

Scrolling

a. Down a line at a time ..... <CTRL> W
b. Up a line at a time ..... <CTRL> Z
c Continuous up ..... <CTRL> QZ
d. Continuous down ..... <CTRL> QW

Center a line ..... <CTRL> OC

_____ Step 5- INSERTING AND DELETING - Use the cursor movement keys to move around the memo to correct errors. Insert spaces, words, delete spaces, lines and words as needed. Be sure you practice using the <INSERT> key to toggle both ON and OFF.

_____ Step 6 - ADD A NEW PARAGRAPH - At the bottom of the memo add a sentence that starts: "Our discussions so far made me realize that computers _____." Be sure to use the Word-wrap feature of WordStar and do not place a <RETURN> at the end of each line. Instead, keep typing steadily and watch WordStar adjust the lines.

_____ Step 7 - Now save your corrections with <CTRL> KD, SAVE--done.

!!!STOP, CONTINUE ON ONLY IF YOUR COMPUTER IS CONNECTED TO A PRINTER!!!

_____ Step 8 - Now print your new document by typing P from the "OPENING MENU", enter the name of your file MEMO and press <ESC> to activate the printer. You may end now, or continue--time permitting.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials

This page intentionally left blank

IF TIME PERMITS, YOU MAY WISH TO CONTINUE WITH THESE STEPS.

_____ Step 1 - CENTER TEXT - Center the two lines "To:" and "From:" by holding <CTRL> while you tap O and then C.

_____ Step 2 - BOLD PRINT - Make the words "To:" and "From:" bold-faced by placing the commands <CTRL> PB, BEFORE and AFTER the words to be made bold. (Be sure <INSERT> is ON).

_____ Step 3 - MARKING AND MOVING A BLOCK OF TEXT - Using the function keys F7 and F8, you can mark a block of text to be moved wherever you wish. So now place your cursor at the start of the sentence you want to mark and press F7. Then move the cursor to the end of the sentence and press F8. You will see the text highlighted. Now move your cursor to some other place in your memo and hold <CTRL> while you tap K and V.

To reform the copy so it all fits in the margins, place your cursor at the beginning of the paragraph with copy out of place, and hold <CTRL> while you tap B. Press <CTRL> and B as often as you need to fill all the copy lines up.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Evolution of Computers and Computer Categories	Lecturette	Slides
	Topics to be included:	vacuum transistors IC
	Survey of human endeavors to automate computing --	Altair PC
:30	Manual devices (abacus)	CAD mini
	Calculators (Pascal)	mainframe
	First generation computer	(org chart)
Start _____	Second generation computer	
	Third generation computer	
	Fourth generation . . .	
End _____	Three major classes of computers used today:	Zimmerman: p. 19-23.
	mainframes minicomputers microcomputers	
	Students may take notes. See p. 15 of manual.	

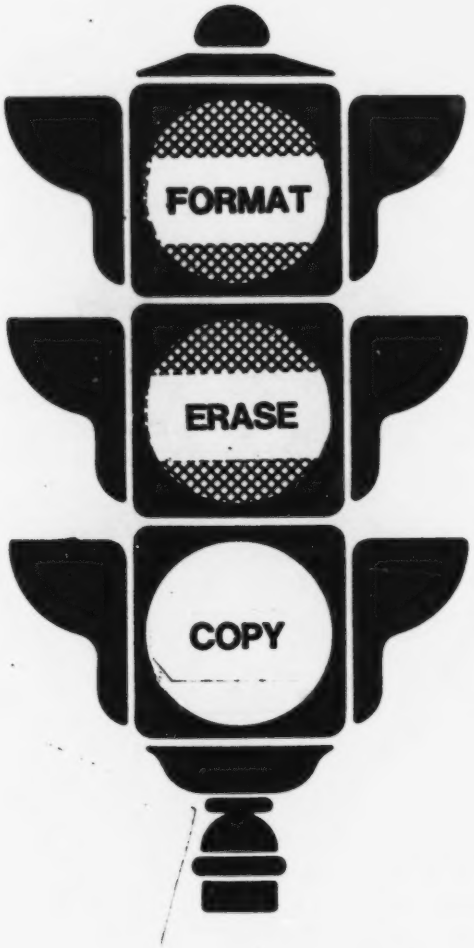
NOTES ON EVOLUTION OF COMPUTERS

AND COMPUTER CATEGORIES

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
	Lecturette:	
Operating System - Overview DOS - Part 1 :50 (Time includes exercise 6) Start _____ End _____	The operating system is software that manages the operations and tasks performed by the computer. It is a program that supervises and controls the computer system's resources. DOS - Disk Operating System - manages the input from the keyboard and disk drives, the output to the monitor and the printer, and storage on the disks. Makes parts work. Refer to page 16 Operating System. Like the traffic officer manages the flow of traffic in several directions, DOS manages the flow of commands, instructions and tasks that relate to computer operations. When we created the document MEMO, DOS was managing the commands we entered at the keyboard. DOS sent the display of what we typed to the screen. DOS controlled the messages to the printer. DOS stored the MEMO on the disk when we told DOS to store it. Now there is a file (document) on the disk: MEMO. [Demo ofDOS commands: DIR, COPY, RENAME, ERASE & TYPE. Follow the steps of Exercise 6, PC DOS Part 1 - Use of the Operating System to do the demo of these DOS commands on thevideodisplay.	Operating System Disk Page 16 Damaged Diskette or illustr. Zimmerman: Chap 3. p. 66-90. Manual p.17

OPERATING SYSTEM



INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Exercise 6 PC DOS	Student work individually at computers	Manual Page 17
End _____	When student is ready to print, instructor must check that printer is connected and turned on, paper loaded, etc. before student may proceed to print.	Student Exercise disk

EXERCISE 6
PC-DOS PART 1 - USE OF THE OPERATING SYSTEM

_____ Step 1 - With your computer OFF, place the DOS diskette in the A drive (left-hand drive). Place your Exercise disk in drive B

_____ Step 2 - Turn on the computer and monitor.

_____ Step 3 - Find out what files are on the each diskette
For the A drive:
Type .....DIR <RETURN>

_____ Step 4 - To get a directory of the files on the B drive, first we need to change the prompt so at the A>
Type .....B: <RETURN>
Then at the B>
Type .....DIR <RETURN>

_____ Step 5 - Make a copy of the file called MEMO
Type at B>.....COPY MEMO MEMO2 <RETURN>

_____ Step 6 - Make more copies of MEMO
Type at B>.....COPY MEMO MEMO3 <RETURN>
COPY MEMO MEMO4 <RETURN>
COPY MEMO MEMO5 <RETURN>

_____ Step 7 - Again call up a directory
Type at B>.....DIR <RETURN>

_____ Step 8 - Change the name of MEMO4
Type at B>.....RENAME MEMO4 NEWNAME <RETURN>

_____ Step 9 - See if the new file is in the directory

_____ Step 10 - Erase MEMO5 from the disk
Type .....ERASE MEMO5 <RETURN>

_____ Step 11 - Check to see if it is gone from the directory

_____ Step 12 - Display the contents of MEMO on the screen
Type .....TYPE MEMO <RETURN>

_____ Step 13 - Now create a printout of your directory

!! BE SURE YOU ARE HOOKED TO A PRINTER!!

_____ Step 15 - First run a directory. Then hold <SHIFT> while you tap <PRT SCR> and everything on the screen will be printed on the printer.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Summary and Class assignment	Review and summarize.	
:	Suggested review: Go around room and each participant mention one topic or activity covered.	
Start _____		
End _____	Explain class assignment: refer to page 18	Manual p.18

HOMEWORK ASSIGNMENT

Look in the media (newspapers, magazines, TV shows, etc.) for mention of computer hardware, software, and peripherals. We recommend that it be something of particular interest to you. Present findings in Exercise 7.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Homework Presentation --		Wordstar disks
	Do Homework review -- Exercise 7	Student Exercise disks
:40		
Start _____	When student is ready to print, instructor must check that printer is connected and turned on, paper loaded, etc. before student may proceed to print.	Page 19-20
End _____		

EXERCISE 7

HOMEWORK REVIEW

Instructions:

To open a file:

With WordStar in the "A" drive and your Exercise Disk in the "B" drive, turn on the computer. This will be a chance to review WordStar as well as report on the homework.

1. Press L (to change the logged drive)
2. Answer the question by pressing B: <RETURN>
3. Press D (to open a document file)
4. Type filename (i.e. Homework) <RETURN>

Now type this:

To: (Name of Instructor)

From: (Your Name)

Since the last class I was able to find information about _____. I learned that _____ _____.

In addition, since the last class I have had questions about ____ _____.

Since the last class, my discussion with _____ about _____ was the most important since I started this program.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials

This page intentionally left blank

NOW SAVE AND PRINT THIS MEMO.

Instructions:

To save a file

1. Go to Block Menu <CTRL> K
2. Choose save operation desired

   Save and Done = D

Your document will be saved and the "OPENING MENU" will appear.

STOP! CONTINUE ONLY IF YOUR COMPUTER IS CONNECTED TO A PRINTER!

To print a file from "OPENING MENU"

1. Press P to print a file
2. Enter filename (i.e. Homework)
3. Press <ESC> to begin printing immediately

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
DOS Part 2	Lecturette:	DOS disks
:60	Briefly review concepts from DOS part 1 (managing tasks).	
(time includes DOS exercise 8)	PC DOS only one operating system. Also: AppleDOS (Apple) CP/M (Radio Shack, Kaypro) UNIX (AT&T)	Page 21 DOS Commands
Start _____		Exercise 8 Page 22-23
End _____	PC DOS for IBM similar to (compatible with) MS DOS (Zenith, Compaq, Panasonic).	
	Most of DOS on disk, ROM-BIOS on chip. Must Boot from disk. Cold boot - start computer with DOS disk.	Zimmerman: Chap 3. p.66-90.
	After DOS boots, use DOS as file management tool. Refer to page 21 - DOS Commands. Review DIR, COPY, ERASE - covered in previous DOS lesson. Compare internal vs. external commands.	
	Files are stored on disk by name. Filename convention: required - 1 to 8 characters; optional - period (.) and 3 letter extension. Example MEMO. No spaces in filename. Punctuation reserved by DOS for its use.	
	Files are stored on diskettes (floppy disks)	

. . Continued on next page

DOS Commands

The following are some of the commands that are frequently used in PC or MS DOS -- Disk Operating System.

COMMAND:	FUNCTION:
DIR	Displays on the screen a list of all the files on the disk. Variations:
	DIR/W — Displays a wide-screen listing
	DIR/P — Pauses the list one screen at a time
	DIR B: — Displays a list of the files on the disk in drive B:
COPY	Copies the file(s) that are specified to the same disk or to another disk. Examples of this command:
	COPY MEMO1 MEMO2 — Copy on the same disk
	COPY A:MEMO B: — Copy from drive A: to drive B:
ERASE	Erases from the disk the files that are specified. Examples of this command:
	ERASE MEMO — Erases from the same disk
	ERASE B:MEMO — Erases from disk in drive B:
FORMAT	Prepares a disk to be used by the computer. A DOS disk must be used for this command. Example of this command with DOS disk in drive A: and a new disk in drive B:
	FORMAT B: — Format the disk in drive B:
DISKCOPY	Copies the entire contents of one disk onto another disk. A DOS disk must be used to make this command work. Example of this command:
	DISKCOPY A: B: — Copies the disk in drive A: to the disk in drive B:
CHKDSK	Displays on the screen a status report of a disk and of the memory in the computer. A DOS disk must be used for this command to work. Example of this command:
	CHKDSK B: — Check the disk in drive B:

Outline & Time	STEPS	Materials
Disk handling and disk maintenance continued	Briefly review disk handling and disk maintenance.	DOS disk
	Do a demo of DOS commands on video display using DOS	
	Suggestion: for demo follow instructions of Exercise 8, Page 22 - 23	
	Point out filenames during directory listings.	
	New DOS commands here: DIR/P, DIR/W, * (wildcard), FORMAT, CHKDSK and warm boot: <Ctrl><Alt><Del>	Zimmerman: p. 52-57 and Chap 3 p. 66-90
	Emphasize protecting data with extra copies and system security.	
	Students work on their own on Exercise 8, DOS Part 2	

EXERCISE 8

DOS PART 2

With DOS in Drive A and your Exercise disk in Drive B practice the following DOS commands:

NOTE: FOLLOW ALL THESE COMMANDS WITH A <RETURN>!!

1. Run a directory of the Disk in Drive A.....A>DIR <RETURN>

2. Run a directory so that it pauses.....A>DIR/P <RETURN>

3. Run a directory so that is appears as
   a wide screen.....A>DIR/W <RETURN>

4. a. Run a directory of the disk in
      drive B.....A>DIR B: <RETURN>

   b. or,
      change the prompt from A> to B>.....A>B: <RETURN>

      Now, run a directory of drive B: with....B>DIR <RETURN>

5. See if MEMO is on disk B.....B>DIR MEMO <RETURN>

6. Look at all the files on disk B that
   start with M.....B>DIR M*.* <RETURN>
   (* stands for "any character" and is called
   a "wild card".

7. Now go back to the A drive.....B>A: <RETURN>

8. Look at all the files on disk A that
   start with W.....A>DIR W*.* <RETURN>

9. Look at all the Command files on
   the A drive.....A>DIR *.COM <RETURN>

10. Now, let's format a blank disk.....A>FORMAT B: <RETURN>
    Be sure DOS is in A drive and a new
    blank disk is in the B drive

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Exercise 8 **DOS pt. 2**	**Students do Exercise 8 on their own.**	**DOS** **Student Disks** **Page 22 Exercise 8**

11. Now let's create some back up copies of some of the files on your Exercise Disk by moving them onto your newly formatted diskette. That way you'll have 2 disks with the same files.....keeps data safe.

    Put Exercise Disk in A:

    Type.....A>COPY A:MEMO B: <RETURN>
    A>COPY A:BUDGET.WKS B: <RETURN>
    A>COPY A:HOMEWORK B: <RETURN>
    A>COPY A:EMPLOYEE.WKS B: <RETURN>

NOW PUT THE DOS BACK INTO THE "A " DRIVE

12. Check the amount of space left on your disk in drive B.....A>CHKDSK B:

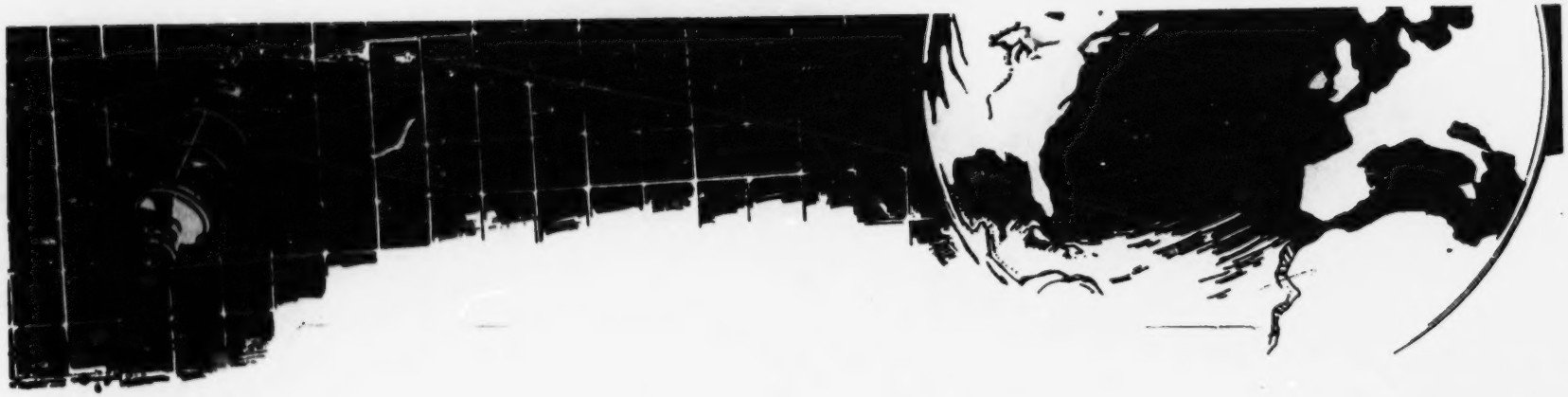
13. Practice a Warm Boot again.....PRESS the <CTRL> and the <ALT> keys togetherand tap the <DEL> key.

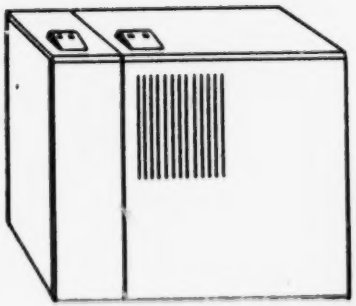
14. Review the parts of a floppy disk and practice safe disk handling. Note the Write-Protect notch.

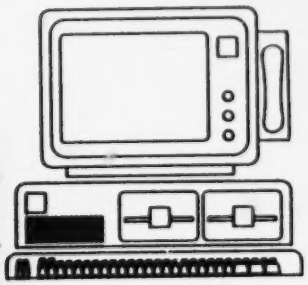
Outline & Time	STEPS	Materials
Telecommunications :40 (time includes In Search demo disk) Start _____ End _____	Refer to Telecommunications illustration page 24. Telecommunications is the term used to describe communications between two computers in different locations through the use of a link such as a telephone hookup. In the illustration, there is a modem attached to the side of the monitor: a modem is a device that allows the transmission of computer files over telephone lines. If we were to send MEMO to a computer in another city, the document would be created here, sent via modem to a local transmission point (note the communications dish next to the computer in the illustration). Have students draw lines to show flow of information. MEMO would be sent to the satellite then down to the receiving dish in another city. From there it would be picked up by the computer at the other end through a phone hookup. A reply memo or letter would be sent back by the same procedure.	Page 24 Zimmerman: Chap 8 p.219-243.

* * * Continued on next page

TELECOMMUNICATIONS







Outline & Time	STEPS	Materials
Telecommunications Continued		
Micro to Mainframe Links	Many people use a modem and telecommunications software to get information from large mainframe computers in other parts of the country. For example, there are many services that provide information about stock market transactions. People doing research in different fields can do bibliography searches. Mention CompuServe, Dow Jones News Retrieval, Dialog Retrievals Services, & computer bulletin boards. Exercise 9 is a simulated telecommunications activity. In this activity, the program goes through the motions of answering research questions by calling a computer in another part of the country and looking for relevant resource material. No actual call is made -- this is a demonstration of how an actual search might take place. Future DCCC network stations will include modem capability. [Students work on their own on Exercise 9 "In-Search".]	Insearch disks Exercise 9 Page 25 Zimmerman: Chap 9 P.242-261

EXERCISE 9

"In-Search"

A Telecommunications Simulation

Directions:

_____ Step 1 - Start with the computer on

_____ Step 2 - Insert the In-search diskette in Drive A

_____ Step 3 - Perform a warm boot <CTRL> <ALT> <DEL>

_____ Step 4 - Once you see the opening screen, press the space bar until you see this:

Select an item by typing its number

1 Business Person
2 Market Researcher
3 Finance Person
4 Attorney
5 Doctor
6 Engineer
7 Scientist
8 Educator

9 Database Tour

Q Type Q to Quit the demo and return to DOS

Now, try searching in some of the data bases, by "playing" the role of one of the occupation areas indicated.

Here are some suggested questions you could try.

Business:

1 What do recent case studies on flexible working hours reveal about productivity and morale?

2 What "perks" are taxable as personal income?

Education:

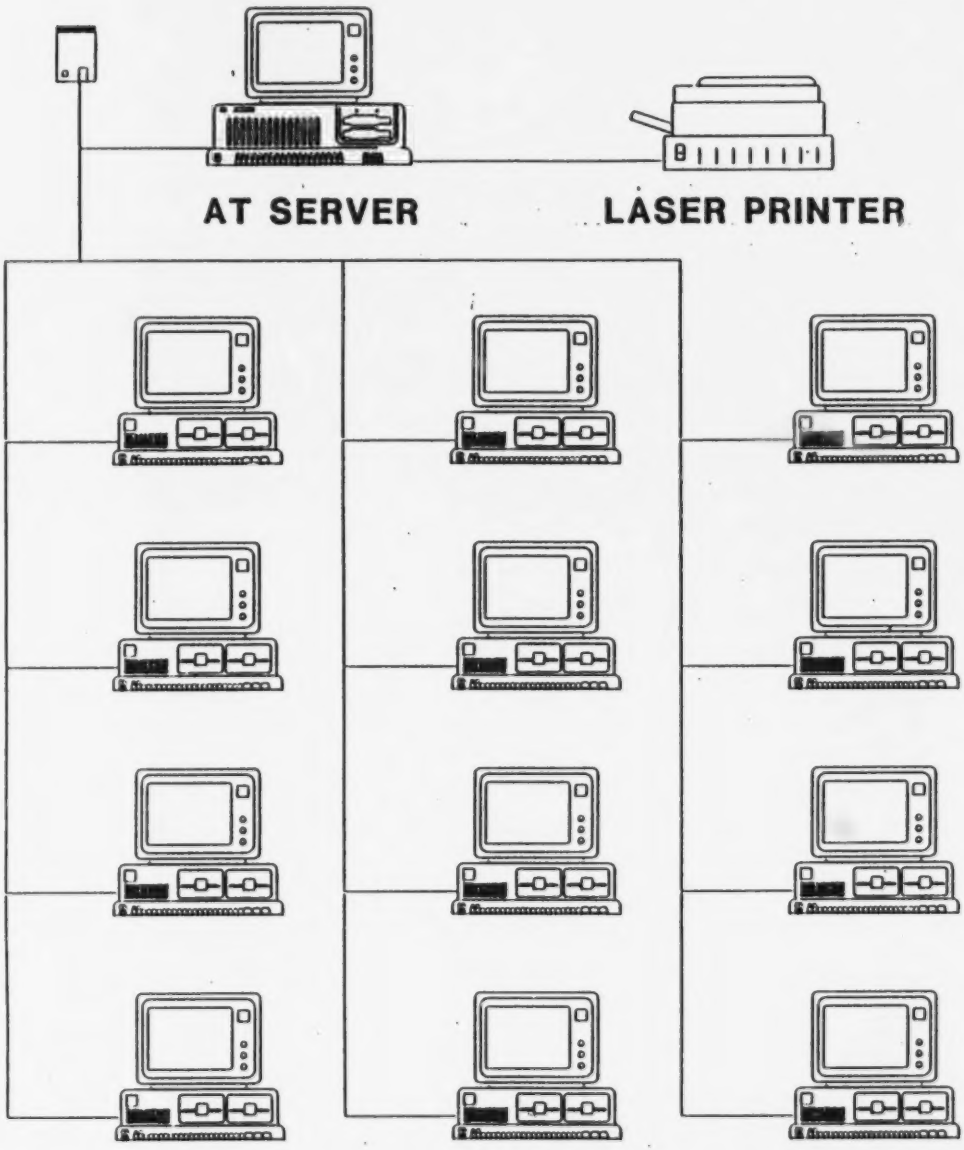
1 What procedures are there for the identification of dyslexia in school children?

2 What is the student-teacher ratio at Laguna Beach High?

Outline & Time	STEPS	Materials
Networking :20 (time includes Exercise 10, page 27) Start _____ End _____	A network is a series of microcomputers that are connected to share common equipment, such as printers, and information. The microcomputers in this room are on a network. [Refer to illustration on page 26 - a DCCC Lab Network. Point out AT server in front of room, and laser printer. Have students look at network connecting cables on the backs.]	Manual Page 26
	These computers can share the programs, files and stored information that are on the hard disk inside the AT. If such a system were in a business, individuals in different offices would be able to work independently on their own computers, or use the shared resources of the network.	Zimmerman: Chap 10 p.265-275

. . . continued on next page

A DCCC LAB NETWORK



Outline & Time	Steps	Materials
Networking continued End _____	Two things are required for a network setup: hardware and software. The hardware is the equipment (computers, stored memory capability, connecting cables). The software is the program that manages the network. Earlier, when you started DOS or WordStar, each of you was working individually. Now we are going to sign on to the network and use the software that is on the AT hard disk. Following the steps in Exercise 10 - Networking Exercise on Page 27 . . [Have students place networking diskette in drive A and the STUDENT EXERCISE DISK IN DRIVE B. Walk the students through the steps in Exercise 10.]	Network disks (Drive A) Exercise disk (Drive B) Manual Page 26-27 Exercise 10

EXERCISE 10

NETWORKING EXERCISE

Using the network, you will bring up both WordStar and another software package called LOTUS 1-2-3, a spreadsheet package.

_____ Step 1 - Insert the networking diskette in Drive A.

_____ Step 2 - After the system boots and you see the A>, type WS.

_____ Step 3 - Once you see the "Opening Menu" of WordStar, you can Exit from the software by hitting the "X" key.

_____ Step 4 - Now we want to demonstrate that the network can serve more than one software application simultaneously. So the teacher will designate one half of the class to bring up Lotus 1-2-3 by typing 123 at the A>.

_____ Step 5 - Those of you still in WordStar can now bring up Lotus.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Applications Software Part 2 Spreadsheets :50 (time includes Exercise 11) Start _____ End _____	Focus on Spreadsheets Simple explanation of spreadsheet. Refer to BUDGET Page 28 Do demo on video display using DEMO.WKS on Instructor's disk. DEMO: 1.Bring up display 2.Move pointer around spreadsheet 3.Enter March figures: Income: 2000 ; 523 ; 473 Expenses: 375 ; 500 ; 175 ; 123 4.Format display to comma format, 0 decimal places; / R F , 0 B5..D7 and same for B12..D15 5.Format totals to currency format, 0 decimal places; / R F C 0 B9..D9 and same for B17..D19 6.Show & explain formulas: B9, B17, B19 7.Copy formulas from January across / C B9 <CR> C9..G9 <CR> same for B17 and B19 8.Save the worksheet / F S <CR> R	Video projection Lotus 123 Instructor's disk Manual Page 28 Zimmerman: Chap 5 p.126-161

BUDGET

BUDGET

INCOME	January	February	March	April	May	June	TOTAL
Salary	2,000	2,000	2,000	2,000	2,100	2,100	12,200
Gifts	425	392	523	867	85	142	2,434
Interest	256	111	473	324	50	115	1,329
TOTAL	$2,681	$2,503	$2,996	$3,191	$2,235	$2,357	$15,963
EXPENSES							
Food	322	487	375	215	533	350	2,282
Rent	500	500	500	500	500	500	3,000
Clothes	211	984	175	250	465	325	2,410
Fun	213	875	123	164	623	55	2,053
TOTAL	$1,246	$2,846	$1,173	$1,129	$2,121	$1,230	$9,745
NET	$1,435	($343)	$1,823	$2,062	$114	$1,127	$6,218

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Exercise 11 **Spreadsheets** End _____	Students will have 123 activated from network activity. Students do Exercise 11 on their own.	Network disk Drive A Exercise Disk Drive B Exercise 11 Page 29 - 30

EXERCISE 11

SPREADSHEETS

Activity: Read each numbered item through before doing it.

_____ Step 1 - Follow instructor's directions for starting up Lotus 1-2-3.

_____ Step 2 - To retrieve the budget worksheet, follow these steps:

KEY TO PRESS	EXPLANATION
/	Brings up the Menu
F	File
R	Retrieve (to retrieve a worksheet from the disk
Return	Brings up BUDGET worksheet

If you have any trouble with these steps, press the gray <ESC> key until all the menus are gone and start again from the beginning.

_____ Step 3 - When the budget worksheet is on the screen, move the pointer around the screen using the <ARROW> keys (cursor movement-pointer keys).

_____ Step4 - Enter the following values into the appropriate cells by following these steps:

a. Move pointer to the cell you wish to use
b. Type only the item for that cell
c. Press the <RETURN> key
d. Move pointer to the next cell you wish to use

	April	May	June
Salary	2000	2100	2100
Gifts	867	85	142
Interest	324	50	115
Food	215	533	350
Rent	500	500	500
Clothes	250	465	325
Fun	164	623	55

Watch the totals change as you enter the numbers.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials

This page intentionally left blank.

_____ Step5- Save this spreadsheet on the disk.

KEY TO PRESS	EXPLANATION
/	Brings up the menu
F	File
S	Save
Return key	Save the worksheet
R	Replace the old worksheet that is on the disk

_____ Step6- There are 3 graphs that have been prepared based on the numbers in this spreadsheet. To see the graphs, follow these steps:

	KEY TO PRESS	EXPLANATION
6a.	/	Brings up the menu
6b.	G	Brings up the Graph menu
6c.	N	Name of Graph
6d.	U	Use

At this point, the following information will be displayed at the top of the screen:

Enter name of graph to make current:
EXPENSES INCOME NET

6e. Use the left and right <ARROW> keys to highlight the graph you would like to see: EXPENSES or INCOME or NET. Press the<Return> key and the graph you have selected will display on the screen.

Press the <SPACE> bar to return to the "GRAPH MENU". Follow Steps 6c. 6d. and 6e. to see a different graph.

_____ Step7- If you have enough time try changing the numbers to see the totals change and to see the graphs change. First, look at each graph to remember how it looks -- especially NET.

Then press the <ESC> key several times until there are no more menus at the top of the spreadsheet. Follow the steps in part 4 to change the values. Watch how the totals change. Follow the steps in part 6 to see the graphs again.

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Application Software Database :40 (time includes Exercise 12) Start _____ End _____	A data base is a collection of information. Some examples include inventory items, students in a class, a Christmas card list. Refer to EMPLOYEE data base, Page 31. In this example we will be using information about employees at a small company. A data base program allows you to store the information in the computer, sort and rearrange it, generate reports about it, and update the information. Often the size of the data base for a business will determine the class of computer that business requires: a smaller data base can be managed on a microcomputer (e.g. clients for a law office); larger - a minicomputer (e.g. account records for a bank); largest on a mainframe (airline reservations). The larger the computer, the larger the database can be and the faster the computer will manipulate the information in the data base. Definitions for data base: the EMPLOYEE data base is one file; each person's information is one record; each category of information (such as Division) is one field.	Video proj. Lotus 123 Instructor Disk with EMPLOYEE Data Base Zimmerman: Chap 6 p.163-191

* * * Continued on next page

EMPLOYEE

EMP #	LAST	FIRST	DIVISION	SEX	SOC SEC #	SALARY	POINTS	TITLE
1001	Donovan	Virginia	Finance	F	263-78-1234	1400	8	Bookkeeper
1002	Cressey	Helen	Sales	F	129-63-3242	1100	3	Salesperson
1003	Holden	James	DP	M	422-18-3899	2100	2	Programmer
1004	Jones	Mary	DP	F	763-47-3744	4500	7	Supervisor
1005	Smith	Randolph	Admin	M	211-47-7332	8500	3	President
1006	Morgan	George	Finance	M	476-33-4878	3100	8	Vice Pres.
1007	Jefferson	Thelma	Admin	F	985-33-1932	800	3	Admin Asst
1008	Sayers	Vicki	Finance	F	498-48-8788	1400	2	Accountant
1009	Jaspers	Jerry	DP	M	122-93-9477	1500	7	Programmer
1010	Blackstone	Rodger	Shipping	M	399-31-1221	3300	3	Supervisor
1011	Wagner	Jerome	Shipping	M	433-90-0922	1200	1	Clerk
1012	Harmison	Janet	Shipping	F	488-20-1889	1100	4	Clerk
1013	Lyman	Marilyn	Training	F	878-12-2637	4400	9	Director
1014	Palmer	Marie	Sales	F	744-87-9221	3200	2	Salesperson
1015	Smith	Gert	Sales	F	324-26-9327	1400	5	Salesperson

-31

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Exercise 12 Database Exercise Using Lotus End _____	Do demo on video display Demo steps: Bring up EMPLOYEE data base: / F R EMPLOYEE Sort by Last name: / D S P Move cursor to sort column (B) <CR> A (for ascending) <CR> G (for Go) Sort by Emp # Same steps as above with column A Sort by Salary Same steps as above but Descending order Sort by Emp # Same steps as above with column A Students do Exercise 12, Database Exercise using Lotus on their own. *CLASS OPTION: Data base exercise using dBase, see appendix A, p. 40-44. Option: Students could enter records for 10-15 min., then break, close out Employee file and call up Employed file. Employed has all the entries entered--use this to view and sort.	Networking disks to get into Lotus (Drive A) Exercise Disk (Drive B) Page 32 or Page 40-44.

EXERCISE 12

DATABASE EXERCISE USING LOTUS 1-2-3

_____ Step 1 - Follow instructor's directions for starting up Lotus 1-2-3.

_____ Step 2 - To retrieve the EMPLOYEE data base, follow these steps:

KEY TO PRESS	EXPLANATION
/	Brings up the Menu
F	File
R	Retrieve

Use <ARROW> keys to move pointer to EMPLOYEE
Press <RETURN>

_____ Step 3 - When the EMPLOYEE data base is on the screen, move the pointer around the screen using the <ARROW> keys to see columns A - I.

_____ Step 4 - To sort the Employee records, followsteps:

KEY TO PRESS	EXPLANATION
/	Brings up the Menu
D	Data menu
S	Sort menu
P	Primary-Key for sorting

Use <ARROW> keys to move pointer to the column you wish to sort ie. column B to sort by Last name, column D by Division. When pointer is on correct column, press <Return>. Then press:

	A	Ascending order sort
OR	D	Descending order sort
	<RETURN>	Enter selection
	G	Go - perform the sort

Look at the records to see what happened.

_____ Step 5 - Follow the steps in #4 (above) to perform the following sorts:

Sex	Ascending
Salary	Descending
Last Name	Ascending
Points	Descending
Emp #	Ascending

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
MAINFRAME ACTIVITY	Lecturette on Mainframes	Mainframe terminals
:50 (time includes Exercise 13)	Topics to include Differences between micro and mainframe	Zimmerman: Chap 9 p.245-262
Start _____	Concurrent tasks	
End _____	Timesharing Securing data	
	Take class into lab to sign onto Mainframe. Review facilities: IBM 4361, HP 3000, etc. Checks hours, services, including tutors.	
	Do Exercise 13, Mainframe Activity, p.33.	Exercise 13

EXERCISE 13

MAINFRAME ACTIVITY

_____ Step 1- Seated at a terminal, turn the terminal on ..... wait until the screen shows blocks at the bottom.

_____ Step 2 - Press F1 or if there is no F1 key go toStep 3.

_____ Step 3 - Press <ENTER> or <RETURN> key.

_____ Step 4 - At the :
type HELLO DEMO.DPR either in upper or lower case and press <ENTER>

_____ Step 5 - At the prompt "ENTER PASSWORD"
type LAB

_____ Step 6 - At the : type INDEX <ENTER>

_____ Step 7 - At the question "Do you need instructions?"
type Y and press <ENTER>

_____ Step 8 - At "continue" type Y to read all

_____ Step 9 - At the question "Would you like a list of categories?"
type Y and press <ENTER>
Read the categories.

_____ Step 10 - At the prompt "Category?" type END <ENTER>

_____ Step 11 - At the prompt : type RUN TICTAC.GAMES.LIB and press <ENTER>. Now you can play.

_____ Step 12 - When done, at : type BYE

_____ Step 13 - Turn off the Terminal

INSTRUCTOR'S OUTLINE

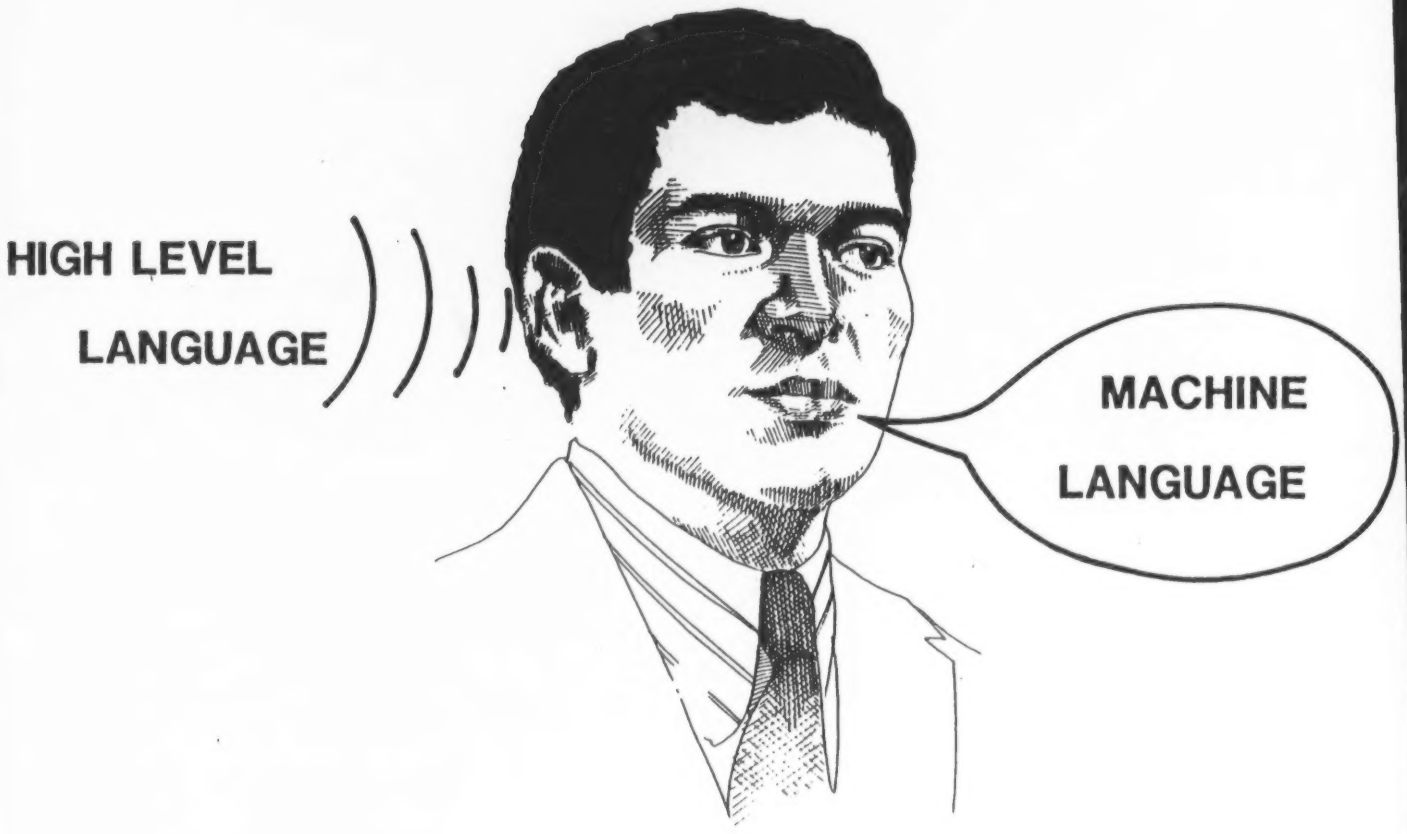
Outline & Time	Steps	Materials
COMPUTER LANGUAGES :20 Start _____ End _____	The steps involved in programming a computer are similar to those used in accomplishing a task. Let's consider Exercise 1 as an example. The task was starting the "Exploring the IBM PC" program on your computer. That task was divided into smaller steps that you did one after another in a specific order. If the steps were incomplete or out of order, you would have had a lot of trouble getting everything to work. Also, the instructions were presented to you in a language you can understand.	Manual Page 34-37 Sample Programs p. 35-36.
	A computer program is a set of instructions, arranged in an appropriate order (and presented in a language the computer can understand), that tell the computer how to accomplish a specific task -- or series of tasks.	Zimmerman: p. 24-26 Exercise 14, p.37

Actually each computer can only understand its own built in language -- its machine language. Machine language is very obscure for people. So a number of programming languages that are closer to human language have been developed. Instructions in these languages must be translated by a program called a compiler into machine language so that the computer can understand the instructions.

In the illustration on page 34 instructions heard by the compiler in a high level language are translated into machine language for the computer.

. . continued on next page.

Programming Languages



INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
COMPUTER LANGUAGES	On pages 35 and 36 are sample programs in three high level languages: BASIC, FORTRAN and Pascal. Each program performs the task of printing the day of the week that corresponds to a number (1 to 7) that is entered by the person using the computer. The person who wrote each computer program figured out the task that was to be accomplished, divided that task into smaller steps, arranged the steps in an appropriate order, then wrote the instructions for those steps in a language the computer could understand.	DOS disks Exercise disks Manual Page 37

The first step in developing a program is identifying the task that is to be accomplished. Then the steps required to accomplish that task are identified and listed in the order needed. This step by step solution is called an algorithm. (Examples of algorithms are found throughout the student workbook: the instructions of the exercises.) From the algorithm, a flow chart, which describes the steps of the program in diagram form, is developed. Then the steps are written as the program code to be input into the computer.

Programming languages that are frequently used include:
COBOL (Business use)
FORTRAN (Scientific use)
BASIC (Beginner's use)
LOGO (Children & beginners)
Pascal (General)

SAMPLE PROGRAMS IN BASIC, FORTRAN AND PASCAL

```
 30 REM    DELAWARE COUNTY COMMUNITY COLLEGE
 40 REM
 50 REM    SAMPLE BASIC PROGRAM  (ON HP 3000 7/8/86)
 60 REM
 70 REM    THE FOLLOWING PROGRAM IS INTERACTIVE AND INCLUDES
 80 REM    DATA VALIDATION TO INSURE THE USER HAS     ENTERED
 90 REM    THE REQUESTED INFORMATION.
110 REM
120 DIM D$[7,9],A$[7]
130 FOR X=1 TO 7
140   READ D$[X]
150 NEXT X
160 PRINT LIN(3)
170 PRINT "ENTER A # BETWEEN 1 AND 7.  THE DAY OF THE WEEK"
180 PRINT "CORRESPONDING TO THAT NUMBER WILL BE RETURNED."
190 INPUT A$
200 CONVERT A$ TO A,300
210 IF A<1 OR A>7 THEN DO
220   PRINT LIN(2)
230   PRINT A;" IS NOT A # BETWEEN 1 AND 7.  PLEASE RETYPE."
240   PRINT
250   GOTO 190
260 DOEND
270 PRINT LIN(2)
280 PRINT "THE DAY OF THE WEEK EQUAL TO";A;"IS ";D$[A]
290 GOTO 350
300 PRINT LIN(2)
310 PRINT A$;" IS NOT A NUMBER."
320 PRINT "RETYPE YOUR INPUT BY ENTERING A # FROM 1 TO 7."
330 PRINT LIN(2)
340 GOTO 190
350 STOP
360 DATA "SUNDAY","MONDAY","TUESDAY","WEDNESDAY","THURSDAY"
370 DATA "FRIDAY","SATURDAY"
380 END
```

```
C       DELAWARE COUNTY COMMUNITY COLLEGE
C              SAMPLE FORTRAN PROGRAM
C
C       THE FOLLOWING PROGRAM IS INTERACTIVE & INCLUDES DATA
C       VALIDATION TO INSURE THE USER HAS ENTERED THE req INFOR
C
      DIMENSION DAY(7)
C
      CHARACTER * 9 DAY
C
      INTEGER A
C
      DATA DAY/"SUNDAY","MONDAY","TUESDAY","WEDNESDAY",
     *"THURSDAY","FRIDAY","SATURDAY"/
```

Outline & Time	Steps	Materials

This page intentionally left blank.

```
      WRITE(6,2)
C
    2 FORMAT(///,1X,"ENTER A # BETWEEN 1 AND 7. THE DAY OF THE",/
     *       " WEEK EQUAL TO THAT NUMBER WILL BE RETURNED.")
C
   20 ACCEPT A
C
      IF(A.LT.1.OR.A.GT.7) WRITE(6,3)A
C
    3 FORMAT(//,1X,I1," ISN'T A NUMBER FROM 1 TO 7. TRY AGAIN.")
C
      IF(A.LT.1.OR.A.GT.7) GOTO 20
C
      WRITE(6,4)A,DAY(A)
C
    4 FORMAT(1X,"THE DAY OF THE WEEK EQUAL TO ",I1," IS ",A9)
C
      STOP
C
      END
```

```
PROGRAM SAMPLE_PASCAL(INPUT,OUTPUT);                          00001000
                                                              00002000
      (* DELAWARE COUNTY COMMUNITY COLLEGE *)                 00006000
      (* SAMPLE PASCAL PROGRAM 7/8/86*)                       00007000
                                                              00008000
TYPE                                                          00009000
  STRING = PACKED ARRAY[1..9] OF CHAR;                        00010000
VAR                                                           00012000
                                                              00013000
  D : INTEGER;                                                00014000
  DAY : STRING;                                               00015000
                                                              00016000
BEGIN                                                         00017000
  WRITE('ENTER A NUMBER BETWEEN 1 AND 7.');                   00018000
  WRITELN('  THE DAY OF THE WEEK');                           00019000
  WRITE('CORRESPONDING TO THAT NUMBER ');                     00020000
  WRITELN('WILL BE RETURNED.');                               00021000
  READLN(D);                                                  00022000
                                                              00023000
     CASE D OF                                                00024000
       1 : DAY := 'SUNDAY';                                   00025000
       2 : DAY := 'MONDAY';                                   00026000
       3 : DAY := 'TUESDAY';                                  00027000
       4 : DAY := 'WEDNESDAY';                                00028000
       5 : DAY := 'THURSDAY';                                 00029000
       6 : DAY := 'FRIDAY';                                   00030000
       7 : DAY := 'SATURDAY';                                 00031000
     END; (*CASE STATEMENT*)                                  00032000
  WRITE('THE DAY OF THE WEEK CORRESPONDING TO ');             00034000
  WRITELN(D:1,' IS ',DAY:9,'.');                              00035000
END.                                                          00036000
```

INSTRUCTOR'S OUTLINE

Outline & Time	Steps	Materials
Exercise 14 Programming exercise using BASIC	Do a brief demo of Exercise 13 on video display Explain steps At step 2 and step 3 explain use of + - * / in doing calculations Students do Exercise 13 on their own	
:40		

Start _____

End _____

EXERCISE 14

PROGRAMMING EXERCISE USING BASIC

With a DOS disk in drive A and your new Exercise Disk in B, do a warm boot to bring up the A>. Then type BASIC and hit <RETURN>.

_____ Step 1 - Let's see your name printed out by the computer.
Type: PRINT "<your name>" <RETURN>

_____ Step 2 - Type: PRINT 2+3 <RETURN>

_____ Step 3 - Now let's ask the computer to convert a Fahrenheit temperature of 75 degrees to a Centigrade temperature.
Type: PRINT (75-32)*5/9 <RETURN>

_____ Step 4 - To clear previous work.
Type: CLS <RETURN>

_____ Step 5 - Now here is a BASIC program with program statements that can be saved and run.
Type the following exactly as it appears here:

```
10    INPUT  "Enter a Fahrenheit temperature (ENTER '0'
      to quit): ",X     <RETURN>

20    If X=0  then Stop    <RETURN>

30    PRINT "The Centigrade Temperature is:", (X-32)*5/9
     <RETURN>

40    GOTO 10    <RETURN>
```

_____ Step 6 - NOW.....save this by typing

```
SAVE "B:TEMP"    <RETURN>
```

_____ Step 7 - Now RUN it by pressing (F2)

_____ Step 8 - When you're finished type "0". After "ok", Type: SYSTEM and <RETURN>.

SAMPLES OF PRINTER STYLES

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in data processing type, elite size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in data processing type, pica size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in correspondence quality type, elite size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in correspondence quality type, pica size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in correspondence quality type, double size.

Hello! Welcome to a sample of print styles. This is a Dot Matrix printer in data processing type, condensed size.

Hello! Welcome to a sample of print styles. This is a Dot Matrix printer in data processing type, condensed size.

* Most of this manual was printed on a laser printer.

APPENDIX A:

EXERCISE 12

DATABASE USING dBASE III PLUS

(***Follow your teacher's instruction to start dBase***)

I. Instructions for using the menus

A. Press F2 key to begin the ASSISTANT. At the top of your screen is the menu bar. Use the ← and → key to move back and forth across the menu bar to open one of the menus.

B. Below each menu bar is a pull-down menu for the menu selection on which you are currently stationed. Use the ↑ and ↓ key to move up and down through the menu options. Press <RETURN> to select the desired menu option.

C. On some pull-down menu options a submenu appears. Use the ↑ and ↓ key to move up and down through the submenu options. Press <RETURN> to select the desired submenu option.

II. Start

A. <u>Change the default disk</u>

1. Open the Tools Menu (Use ← or →)
2. Select Set drive (Use ↑ or ↓)
3. Select B: drive where you want to store data file.
4. Press <RETURN>

B. <u>Create the Employee Database File</u>

1. Open the Create Menu (Use ← or →)
2. Select Database file (Use ↑ or ↓)
3. Press <RETURN>

4. Select the drive where you want to store your new file.
(Use B:)

5. Press <RETURN>

Your are prompted:
"Enter the name of the file:"

6. Type EMPLOYEE. If you make a mistake use the Backspace key.

7. Press <RETURN>

The database file structure table appears. This is where you enter the structure by typing in labels for:

- Field name
- Type
- Width
- Decimals (for numeric types only)

See Chart A for sample of the Employee Field Structure and proceed.

8. Type Firstname and press <RETURN>

9. Type C

10. Type 15 and press <RETURN>

11. Continue, using Chart A as a guide.

12. <RETURN> twice to end structure.

13. At "input data records now?" - answer "Y"

C. Adding employee records to the database file

1. Open the Update Menu (Use ← or →)

2. Select Append (Use ↑ or ↓)

3. Press <RETURN>

4. A blank template appears on the screen. The fieldnames you just entered also appear on the screen. Next to each name is space to enter data equal in length to the width you assigned each field.

Use Chart B for steps 5-10

5. Type Virginia and press <RETURN>

6. Type Donovan and press <RETURN>

7. Type Finance and press <RETURN>

8. Type F

9. Type 263-78-1234

10. Type Bookkeeper and press <RETURN>

11. Repeat steps 5-10 for each employee record found in Chart B.

12. When all employee records have been entered, hold down the <CTRL> key and press the <END> key.

13. Note: If <CTRL> <END> doesn't work, press <RETURN> key 3 or 4 times till it does.

D. View All Employee Records

1. Open the Retrieve Menu (Use ← or →)

2. Select List (Use ↑ or ↓)

3. Press <RETURN>

4. Select, Execute the Command (Use ↑ or ↓)

5. Press <RETURN>

6. You are prompted

   Direct the output to the printer? [Y/N] ____

   Press N

7. Your data should display on the screen

E. View Employee Records for Finance

1. Open the Retrieve Menu (Use ← or →)
2. Select List (Use ↑ or ↓)
3. Press <RETURN>
4. Select, Build a search condition (Use ↑ or ↓)
5. Press <RETURN>
6. Select Division (Use ↑ or ↓)
7. Press <RETURN>
8. Select = Equal To (Use ↑ or ↓)
9. Press <RETURN>
10. Type Finance (If you used capitals originally, then you must use caps now)
11. Press <RETURN>
12. Select No more conditions (Use ↑ or ↓)
13. Press <RETURN>
14. Select, Execute the command
15. Press <RETURN>
16. Press N
17. Your data should display on the screen
18. Try other conditions. (i.e. sex and title)

CHART A:

Employee Field Structure

Field Name	Type	Width	Decimals
Firstname	C	15	
Lastname	C	15	
Division	C	10	
Sex	C	1	
Socsec	C	11	
Title	C	15	

CHART B:

Personnel Data

FIRST	LAST	DIVISION	SEX	SOC SEC #	TITLE
Virginia	Donovan	Finance	F	263-78-1234	Bookkeeper
Helen	Cressey	Sales	F	129-63-3242	Salesperson
James	Holden	DP	M	422-18-3899	Programmer
Mary	Jones	DP	F	763-47-3744	Supervisor
Randolph	Smith	Admin	M	211-47-7332	President
George	Morgan	Finance	M	476-33-4878	Vice Pres.
Thelma	Jefferson	Admin	F	985-33-1932	Admin Asst.
Vicki	Sayers	Finance	F	498-48-8788	Accountant
Jerry	Jaspers	DP	M	122-93-9477	Programmer
Rodger	Blackstone	Shipping	M	399-31-1221	Supervisor
Jerome	Wagner	Shipping	M	433-90-0922	Clerk
Janet	Harmison	Shipping	F	488-20-1889	Clerk
Marilyn	Lyman	Training	F	878-12-2637	Director
Marie	Palmer	Sales	F	744-87-9221	Salesperson
Gert	Smith	Sales	F	324-26-9327	Salesperson

SELF PACED STUDY GUIDE

FOR

COMPUTER COMPETENCY:

WRITTEN BY JOSEPH GALESE AND KING PERRY

Developed for

- INTRODUCTION TO MICROCOMPUTERS -

A COMPETENCY-BASED APPROACH

DEVELOPERS (listed alphabetically) :

by Joseph Galese, Alexis Hillman, Linda Oken and William Snyder

PROJECT DIRECTOR: Thomas Lutz

Supported by the Commonwealth of Pennsylvania's Ben Franklin Partnership through the Advanced Technology Center of Southeastern Pennsylvania, a program of the University City Science Center. Additional funding provided by Delaware County Community College, the DCCC Educational Foundation, the Ethel Sergeant Clark Smith Memorial Fund, and IBM Corporation.

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Delaware County Community College
Media, Pa. 19063
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- PREFACE -

A Ben Franklin Partnership grant authorized a study to design this introductory program of instruction in computer competence. This program is designed to updrade the skills necessary to enter our microcomputer technology programs such as computer-aided drafting and design, computer-aided manufacturing, word processing, data processing, graphic arts, and business/industry training.

Our goal is to enable students who enter programs which use a computer to first acquire a basic level of competency so they can concentrate on the specific skills relevant to their chosen field. All programs at DCCC are designed and delivered based upon identified competencies that participants acquire from their experience. The competencies provide a mechanism for consistent effective presentation and evaluation.

DCCC takes pride in its ability to provide microcomputer training in varied formats -

- credit and non-credit
- intensive or long-term
- lecture, demonstration and hands-on
- self-paced paths
- at the College, at your business, at our off-campus site, or at any other site acceptable to both
- custom-designed workshops
- contract arrangement for groups or open for one or more employees

The Self Paced Study Guide for Computer Competency is a highly interactive hands-on approach to computer training. We remove time and scheduling obstacles to becoming better computer users. This program should attract self-motivated individuals who wish to explore their computer capabilities through the exercises and training materials available at Delaware County Community College. A self-paced mode lets you branch out into specific applications which you feel requires more attention or holds more interest for you. Upon completing this program you will have a better idea about which applications or courses of study to pursue from the many available at the college.

Pay particular attention to training aids such as ATI's "Introduction to Business Software", because they focus on resources and applications available to help you think about solutions to problems. The computer works best as a tool which we use to apply more efficiently our ideas and insights.

(T.Lutz)

INTRODUCTION

Welcome to the self-paced instructional program entitled: Introduction to Microcomputers--a Competency-based Approach. In this program you will be given an opportunity to overcome much of the anxiety you may have about computers. You will become familiar with computer terminology, learn to use the computer's keyboard and equipment, learn to handle diskettes, compose and print text, use a mainframe computer, use an operating system, explore the programming process, and recognize software uses and explore applications.

Resources are available to permit you to move as quickly or as slowly through this program as time and/or motivation permits. You may elect to use all or part of the recommended study materials; however, you are responsible to meet minimum competency performance and knowledge.

Following are the goals, procedures, and materials needed to fulfill this self-paced instructional program.

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COURSE GOALS (Competencies)

Recognize computer categories and their place in society and the workplace.

Identify hardware components and how they work in a system.

Demonstrate keyboarding and disk handling.

Demonstrate fundamental knowledge of operating systems.

Apply basic skills in mainframe processing.

Recognize commonly used applications software.

Examine different types of software and the role each plays.

Identify fundamental programming languages and the role they play.

Procedures

Following is a list of materials for use in your self-paced training. The materials are in many modes: text, software, audio, video and slides. In most cases, specific skills will be comprehensively covered in all modes, so you may begin your study in any one of the competencies with the mode which is most appropriate to your study behavior.

Although it is not necessary to use all recommended materials for each competency, it is essential that you use all primary sources marked by *. All exercises in the DCCC Student Exercise Manual should be performed after all other activities. The exercise will serve as the last activity before each evaluation. When using software materials, always follow the software instructions carefully.

The facilities will include a Library area to support all written materials, a Computer Laboratory to support software and hands-on experiences, and a Resource Center to support all audio, video or slide packages, as well as, evaluations.

It is important that you stick to the sequence of this study guide and only move on as instructed. Periodic evaluations are noted and must be scheduled through your training or faculty advisor.

Remember, go through the materials thoroughly, take comprehensive notes, review often, and prepare for all evaluations. If any areas have to be re-studied, it would be best to choose an alternate mode and not use the same materials previously used.

Instructional Materials

Required Text:

Microcomputer Applications,
Wolff, et al, 1985
Student Exercise Manual, DCCC.
Self-paced Study Guide, DCCC.

Alternative Text:

Understanding and Using Microcomputers
Zimmerman & Conrad, West, 1986.

Reading Materials:

Programming Logic
M. Leeson, SRA Pub.
Using Your IBM Personal Computer
Poole, lt. W. Sams, 1983
Understanding and Selecting Small Business Computers
Gibson & Gibson, Prentice Hall, 1986
PC-DOS, P. Norton, Prentice Hall, 1985
Software Solutions for the IBM PC,
Willmott, Prentice Hall, 1983
Instructional Manual for Computer Lab Users,
DCCC, pp. 4, 9, 31, and 37.
Understanding Computers Series, Time-Life.

Video Materials:

Using Your Machine IBM PC Computer,
Chase Scientific
Using dbase III, Chase Scientific
Using Lotus 1-2-3, Chase Scientific
Using WordStar, Chase Scientific
Ten Easy Lessons, IBM
Pushing the Limit, IBM

Software:

Typing Instructor, Individual
Typing Tutor III, Simon & Schuster
ATI Typing Tutor, ATI
Exploring the IBM PC, IBM
How to Use the IBM PC, XT with PC DOS
Teach Yourself PC-DOS, ATI
Professor DOS, Tutorial Set
PC-DOS for the IBM, Vol. 1 & 3, ATI
Introduction to the Operating System,
Comprehensive Software
Introduction to Business Software, ATI
Introduction to Word Processing, ATI
WordStar, Vol. 1, ATI
Introduction to Database Management Software, ATI

dBase III, Vol. 1, ATI
Lotus 1-2-3, Individual
Lotus 1-2-3, ATI
The Basics of BASIC, Focus
Teach yourself BASIC, ATI
PC-DOS, Cdex
WordStar, Cdex
PC-Net, IBM.
dBase III, Individual
InSearch, Menlo
Word Processing Using WordStar, DCCC
Database Management Using dBase III Plus, DCCC.

Audio Tape Materials:

How to Use 1-2-3, Fliptrack
How to Operate the IBM PC, Fliptrack
How to Use WordStar, Fliptrack

Slide Materials:

The History of Computing, Computer Museum

UNIT I

An Introduction to the Computer

Video Materials: *Pushing the Limit (all)
and
Ten Easy Lessons (Chapter 1)

Alternative Text: Understanding and Using Microcomputers
(Chapeter 1)

Unit Goals:

1. To grasp the power and efficiency of computers.
2. To establish a general understanding of how they work and how they can serve.
3. To grow more comfortable with computers and with your use of computers.
4. Review trends in the devlopment pattern of computer technologies relative to the instructional areas covered in this program.

After completing this unit, move to Unit II.

UNIT II

Functional Structure of Computers

Text Materials: *Microcomputers Applications,
(Chapters 1, 1-6 to 1-11)

*Student Exercise Manual,
(Exercise 4; ill. p.8)

Alternative Text: Understanding and Using Microcomputers
(Chapter 2: p.12-18,32-64)

Video Materials: Using Your Machine IBM PC Computer (All)

*Ten Easy Lessons,
(Chapter 2)

Unit Goals:

1. To define systems configuration.
2. To know the functional structure and physical layout of hardware devices.
3. To illustrate the inter-connect features of hardware devices.
4. To diagram the information feedback cycle and the computer's place in it.

After completing this unit, move to Unit III.

UNIT III

Computer Components

Review studied materials of Unit II, necessary.

Text Materials: *Understanding and Selecting Small Business Computers (Chapter 2)

*Student Exercise Manual, (Exercise 3)

Video Materials: *Ten Easy Lessons (Chapter 3)

Also, examine the next page, page 9.

Unit Goals:

1. To analyze input/output functions.
2. To recognize support requirements for the computer and peripherals.
3. To differentiate between electronic and mechanical responsiveness and efficiency.
4. To identify the functions of various hardware devices.

Evaluation I (On Units I-III)

After completing this unit, schedule an evaluation. Do not move on until instructed to do so by your advisor.

UNIT IV

Keyboard and Disk Handling

Text Materials: *Student Exercise Manual, (Exercise 1 & 2; ill. p. 4 & 5)

Alternative Text: Understanding and Using Microcomputers (p.14,42,101,50-56)

Video Materials: *Ten Easy Lessons (Chapters 4 and 5)

Software Materials: *Exploring the IBM PC
Typing Instructor
ATI Typing Tutor
Typing Tutor III

Also, examine pages 11 and 12 of this manual.

Unit Goals:

1. To demonstrate proper care and handling of diskettes.
2. To discriminate between application and data diskettes.
3. To explore cursor movement and keyboard manipulation.
4. To begin an application.

After completing this unit, move to Unit V.

UNIT V

Word Processing Applications

Text Materials: *Software Solutions for the IBM PC (PP. 1-31)

*Student Exercise Manual, (Exercise 5 & 7; ill. p.11 & 38)

Alternative Text: Understanding and Using Microcomputers (p.3-9, Chapter 4: p.92-124)

Video Materials: Ten Easy Lessons (Chapter 8)
*Using WordStar

Software Materials: Introduction to Business Software
Introduction to Word Processing Software
*WordStar Vol. 1, (ATI)
WordStar, (Cdex)
Word Processing Using WordStar, DCCC.

Audio Materials: How to Use WordStar, Fliptrack

Unit Goals:

1. To identify and define applications software.
2. To recognize the role wordprocessing applications play.
3. Examine fundamental features of a word processing application.
4. To list several major packaged software products for word processing applications.

Evaluation II (On Units IV & V)

After completing this unit, schedule an evaluation. Do not move on until instructed to do so by your advisor.

UNIT VI

Spreadsheet Applications

Review studied materials of Unit III, if necessary.

Text Materials: *Student Exercise Manual,
(Exercise 11; ill. p.28)

Alternative Text: Understanding and Using Microcomputers
(Chapter 5: p.126-161)

Video Materials: Using Lotus 1-2-3

Software Materials: *Lotus 1-2-3, ATI
Lotus 1-2-3, Individual

Audio Materials: *How to Use 1-2-3, Fliptrack

Unit Goals:

1. To recognize the role spreadsheet applications play.
2. Examine fundamental features of a spreadsheet application.
3. To list several major packaged software products for spreadsheet applications.

Evaluation IV (On Units IV & VI)

After completing this unit, schedule an evaluation. Do not move on until instructed by your advisor.

UNIT VII

Database Applications

Review studied materials of Unit III, if necessary.

Text Materials: *Student Exercise Manual, (Exercise 12A; p.40)

Alternative Text: Understanding and Using Microcomputers (Chapter 6: p.163-191)

Video Materials: *Using dBase III

Software Materials: *dBase III, (ATI) Vol. 1
dBase III (Individual)
Introduction to Database Management Software, ATI
Database Management Using dBase III Plus, DCCC.

Unit Goals:

1. To recognize the role database applications plays.
2. Examine fundamental features of a database management application.
3. To list several major packaged software products for spreadsheet applications.

Evaluation III (On Units IV & VI)

After completing this unit, schedule an evaluation. Do not move on until instructed by your advisor.

UNIT VIII

The Operating System

Review the Video Ten Easy Lessons (Chapter 5) before proceeding.

Text Materials:
- Microcomputer Applications (Chapter 3)
- *PC-DOS (Chapters 4 & 5)
- Software Solutions for the IBM-PC (Appendix)
- *Student Exercise Manual, (Exercise 6 & 8; ill. p.16 & 21)

Alternative Text:
- Understanding and Using Microcomputers (Chapter 3: p.66-90)

Video Materials:
- *Ten Easy Lessons (Chapter 6)

Software Materials:
- *Professor DOS
- Teach Yourself PC-DOS
- How to Use the IBM-PC XT with PC DOS
- *Introduction to the Operating System
- *PC-DOS for the IBM-PC (Vols. 1 & 2), ATI

Audio Materials:
- How to Operate the IBM-PC, Fliptrack

Unit Goals:

1. To identify the roles an operating system plays in running a computer.
2. To analyze common messages and instructions of operating systems.
3. To execute fundamental tasks supported by operating systems.
4. To define operating system and list several types.
5. Recognize the need for computer security and its value.

After completing this unit, move to Unit IX.

UNIT IX

The Classes and Evolution of Computers

Text Materials: *Microcomputer Applications
(Chapter 1, 1-1 to 1-6 and Chapter 2)

Using Your IBM Personal Computer
(Chapter 1)

Understanding and Selecting Small Business Computers
(Chapter 1)

Alternative Text: Understanding and Using Microcomputers
(p. 19-23, Chapter 12))

Slide Materials: The History of Computing, Computer Museum

Unit Goals:

1. To differentiate among microcomputers, minicomputers, mainframes, and supercomputers.
2. To relate a brief history and series of technological and social events related to the evolution of computers.
3. To identify the most appropriate roles of each computer class.
4. To define computer terms: analog, digital, general purpose, special purpose, and hybrid.

Evaluation V: (On Units VIII and IX)

After completing this unit, schedule an evaluation. Do not move on until instructed by your advisor.

UNIT X

Network and Multi-users

Text Materials: *Microcomputer Applications
(Chapters 1, P. 1-6)
*Student Exercise Manual,
(Exercise 9 & 10; ill. p.24 & 26)

Alternative Text: Understanding and Using Microcomputers
(Chapter 10: p.265-275)
(Chapter 8: p.219-243)

Software Materials: *PC Net, IBM
In-Search, Menlo.

Also examine page 14 of this manual.

Unit Goals:

1. To differentiate among stand-alone, networked, and multi-user systems.
2. To experience applications use via a network system.
3. To recognize the requirements for and basic principles of a network system.
4. Examine fundamental features of an online communications software application.

After completing this unit, move to Unit XI.

UNIT XI

The Mainframe

Review materials from Unit IX.

Also, see Mainframe Activity on page 21 of this manual.

Text Materials: Instructional Manual for Computer Lab Users, DCCC, (pages 4, 9, 31, and 37)
*Student Exercise Manual, (Exercise 13)

Alternative Text: Understanding and Using Microcomputers (Chapter 9: p.242-261)

Unit Goals:

1. To interact with a mainframe.
2. To explore facilities and resources of mainframe operations.
3. Appreciate the ability of a mainframe to perform multiple tasks concurrently.
4. Run a pre-selected program on a mainframe.

Evaluation VI (On Units X and XI)

After completing this unit, schedule an evaluation. Do not move on until instructed by you advisor.

UNIT XII

Programming

Text Materials: *Software Solutions for the IBM-PC (PP 31-45)
Understanding and Selecting Small Business Computers (Chapters 4 and 5)
Using Your IBM Personal Computer (PP 90-109)
*Programming Logic (Chapters 1-4)
*Student Exercise Manual, (Exercise 14; ill. p.34-36)

Alternative Text: Understanding and Using Microcomputers (p.24-26)

Video Materials: *Ten Easy Lessons (Chapters 6, 7, and 9)

Software Materials: The Basics of BASIC, Focus
Teach yourself BASIC, ATI

Unit Goals:

1. To relate computer problem-solving to human problem solving.
2. To develop algorithms to describe the steps to be taken in solving a computer problem.
3. To understand the use of programming languages in providing instructions to the computer.
4. Analyze a simple BASIC program based upon a previously defined algorithm.

After completing this unit, move to Unit XIII.

UNIT XIII

Conclusion and Final Evaluation

Review all studied materials, and areas where emphasis is needed apply materials that have not yet been studied.

View Chapter 10 of Ten Easy Lessons for a summation of general activities.

Plan to review hands-on drills and computer activities at the Computer Laboratory.

Rewrite and organize all notes, and associate all studies with course goals (competencies) found on Page 2 of this manual and with Unit Goals found within each Unit.

When you are prepared, schedule your final evaluation with you advisor. Proceed as instructed by your advisor.

STUDENT EXERCISE MANUAL

for

COMPUTER COMPETENCY

- INTRODUCTION TO MICROCOMPUTERS -

DEVELOPERS (listed alphabetically) :

by Joseph Galese, Alexis Hillman, Linda Oken and William Snyder

PROJECT DIRECTOR: Thomas Lutz

Supported by the Commonwealth of Pennsylvania's Ben Franklin Partnership through the Advanced Technology Center of Southeastern Pennsylvania, a program of the University City Science Center. Additional funding provided by Delaware County Community College, the DCCC Educational Foundation, and IBM Corporation.

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INTRODUCTION

Welcome to the program entitled: Introduction to Microcomputers--a Competency-based Approach. In this program you will be given an opportunity to overcome much of the anxiety you may have about computers. During this program you will:

- become familiar with computer terminology
- learn to use the computer's keyboard and equipment
- learn to handle diskettes
- compose and print memos
- use a mainframe computer
- use an operating system
- explore the programming process
- recognize software uses
- explore applications

You are encouraged to follow the attached outline or agenda. Should any questions occur to you, please be sure to bring them up during or after class.

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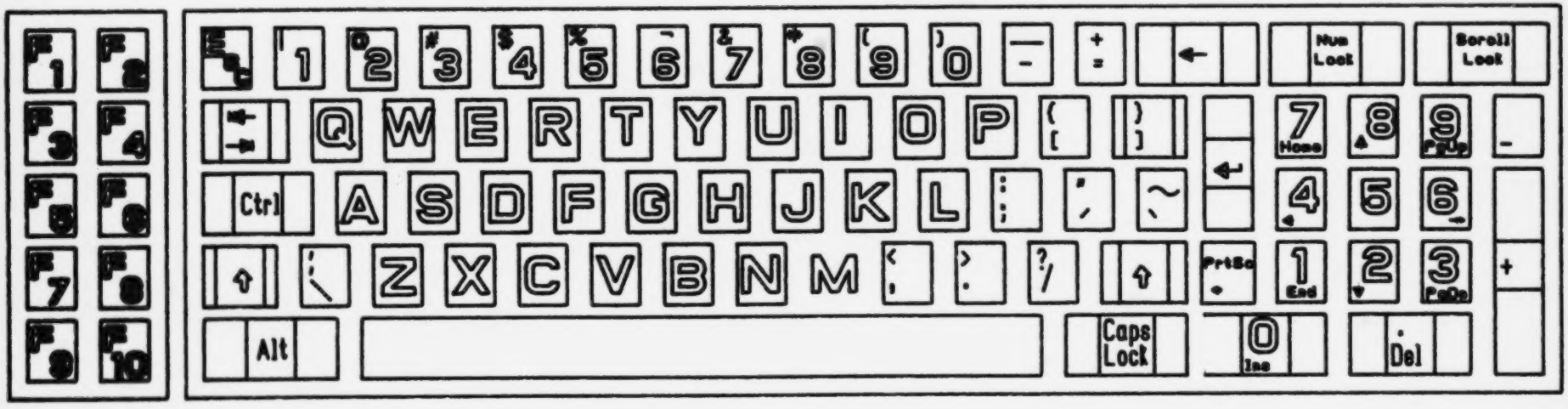
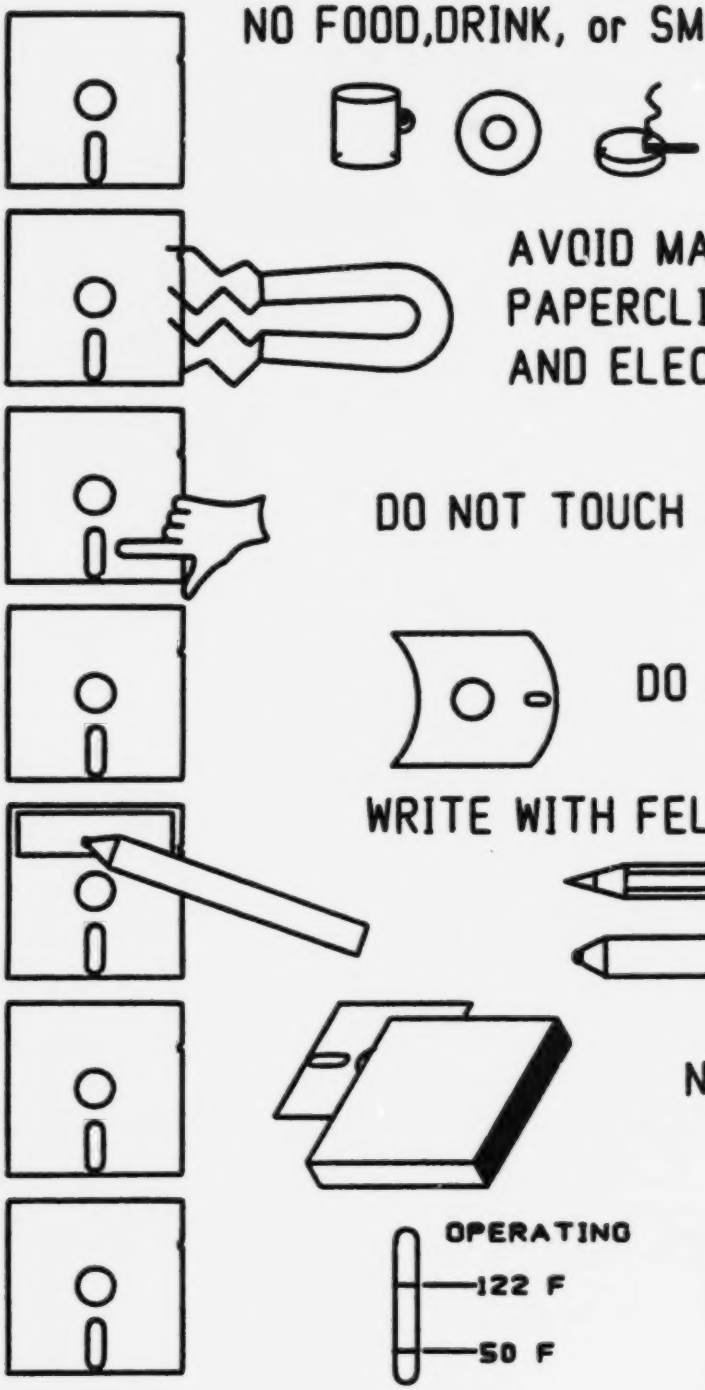
IBM-PC KEYBOARD



CARE OF DISKETTES



EXERCISE 1

KEYBOARDING/DISK HANDLING

DO NOT PROCEED UNTIL YOU READ THESE DIRECTIONS COMPLETELY!!

Using the diskette entitled "Exploring the IBM PC" you will learn about the IBM PC Keyboard.

_____ Step 1 - With the computer off, insert the diskette label side up into the left-hand drive by holding it in your hand with your thumb on the label. Close the disk drive door after inserting the diskette.

_____ Step 2 - Turn the computer on (back right side). Turn the monitor on (front top dial on the monitor).

_____ Step 3 - Wait a minute or so.

_____ Step 4 - Follow the instructions as they come up on the screen.

_____ Step 5 - Stop after reaching the end of Chapter III.

NOW YOU MAY PROCEED.

EXERCISE 2

MEMO

IMPORTANT - READ THROUGH ITEMS 1 - 3 BEFORE DOING ANYTHING!!

_____ Step 1 - Start with your computer off. With your thumb on the label, take the Keyboarding disk out of the paper jacket and place the disk (label up) into the left disk drive. Close the disk drive door.

_____ Step 2 - Turn on your computer and monitor. Wait for the computer to start up.

Now follow the instructions as they appear on the screen.

Here are some helpful hints:

- when you need to go to the next line, press the <RETURN> key

- to make a capital letter, hold down one of the <SHIFT> keys and press the letter you want. The <SHIFT> key is marked ↑. If you make a typo, use the gray ← key to back up, then type the correction.

_____ Step 3 - Now you may begin typing the following short note to your instructor. Fill in the blanks of the Memo as you wish. You may wish to compose your responses on the paper copy of Exercise 2 before typing them on the computer. Don't worry about mistakes at this time...just go ahead and get used to the keyboard.

TYPE THIS

- -

To: (Instructor's Name)

From: (Your name)

I am taking this class because _____. One thing I really want to learn about is _____.

This is about the _____time I have ever used a computer by myself.

In general, I think computers are _____. Having a computer available to me would _____. If I were to use a computer in my work, _____.

I think that doing this memo has been _____.

- -

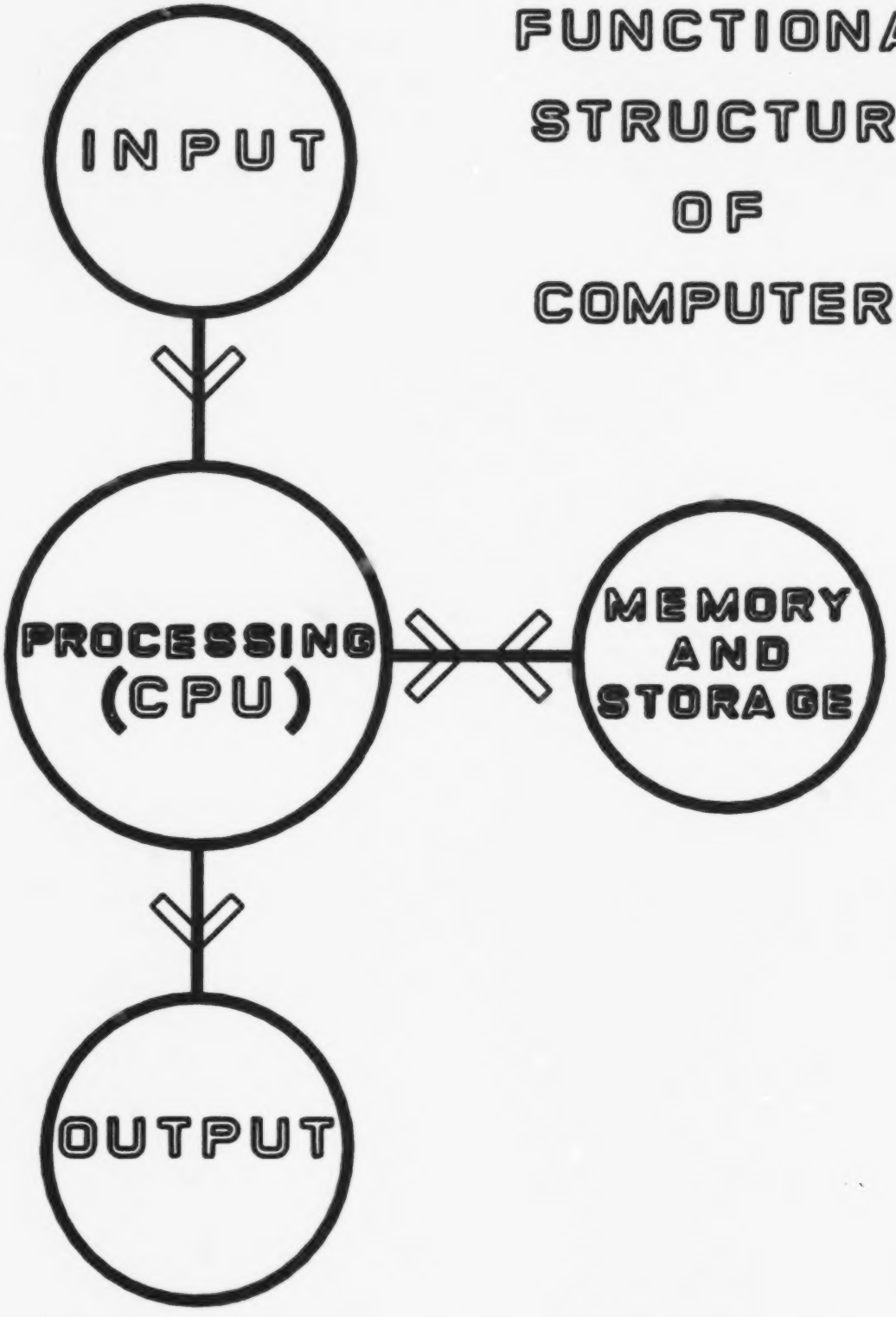
NOW SAVE AND PRINT YOUR MEMO ACCORDING TO THE FOLLOWING INSTRUCTIONS:

_____ Step1 - Press F6 and <RETURN> at the end.

_____ Step 2 - Follow the instructions on the screen. We want you to print out two copies of your memo -- one for yourself, and one for the instructor.

BEFORE PRINTING ON, CHECK WITH YOUR INSTRUCTOR TO BE SURE YOUR COMPUTER IS CONNECTED TO A PRINTER. IF NOT, WAIT UNTIL IT IS CONNECTED.

FUNCTIONAL STRUCTURE OF COMPUTERS



EXERCISE 3

FUNCTION OF COMPUTER COMPONENTS

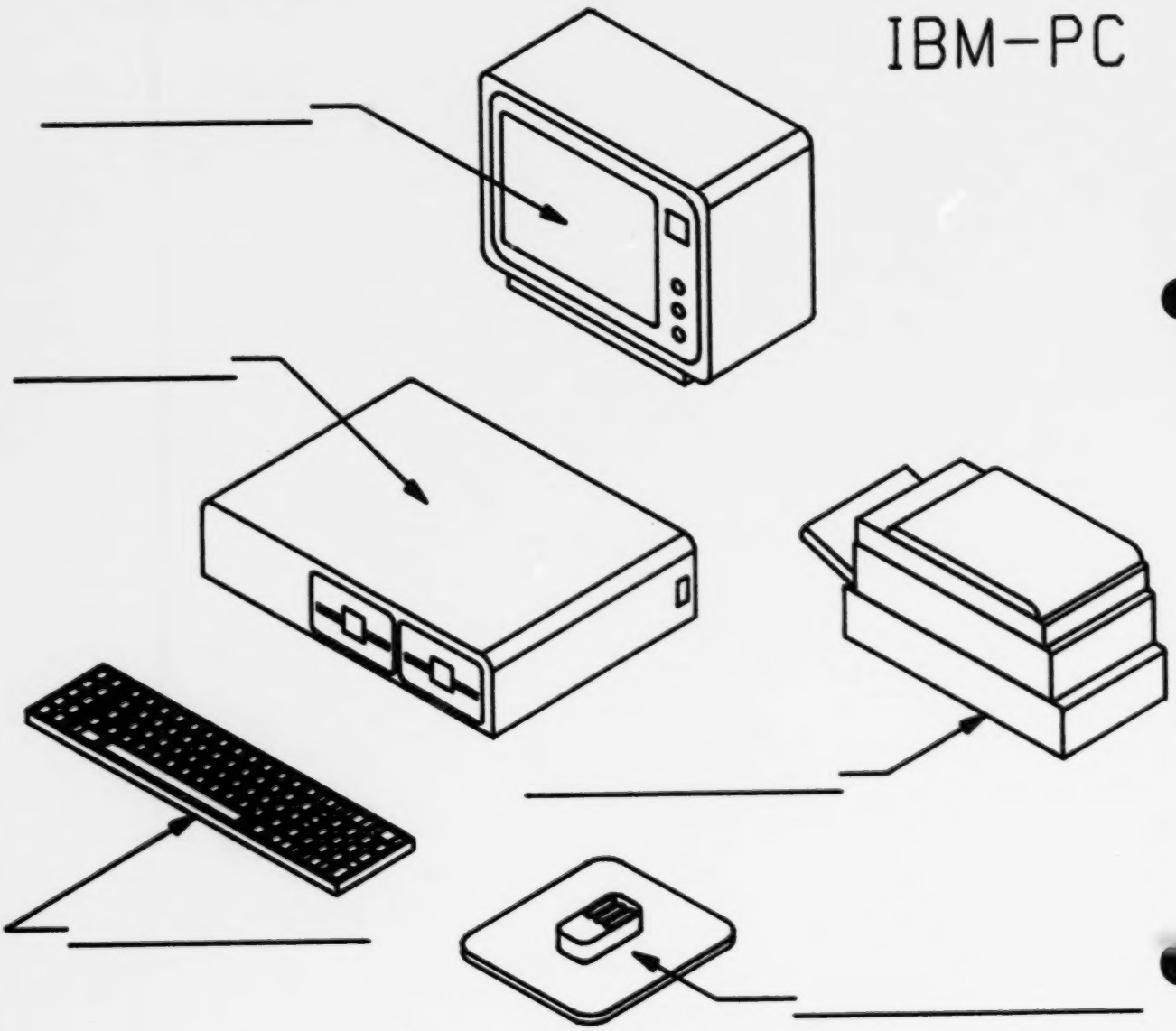
_____ Step 1 - Label the parts of this computer system.

_____ Step 2 - Now identify functions such as: input, output, processing, memory and auxiliary storage.

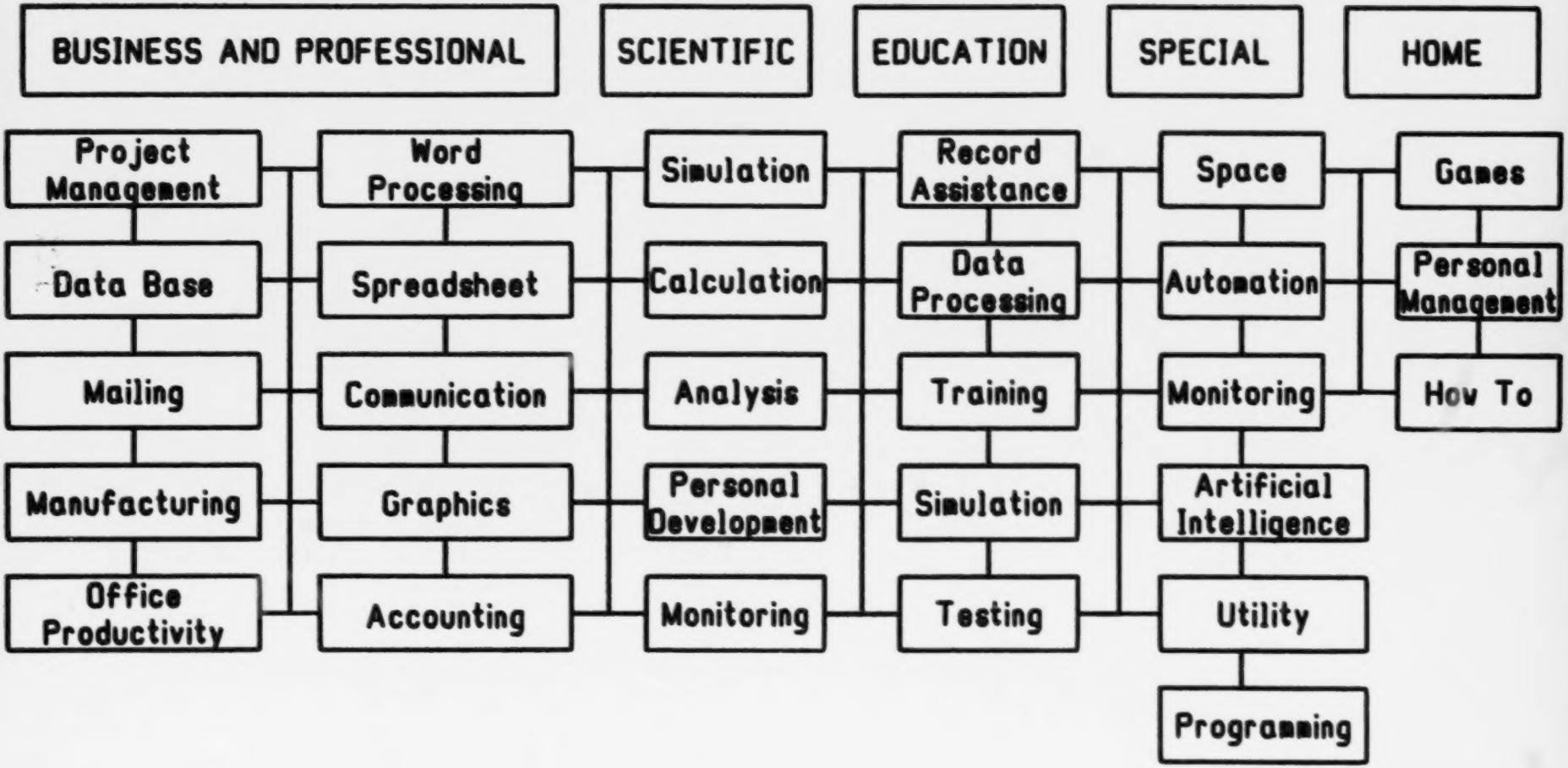
EXERCISE 4

CONNECTING MICROCOMPUTER HARDWARE

Using the parts of this simple microcomputer system, connect the components using lines to represent the connector cables.



SOFTWARE OVERVIEW



EXERCISE 5

WORD PROCESSING EXERCISE USING WORDSTAR

PLEASE READ THROUGH THE INSTRUCTIONS FIRST BEFORE ACTUALLY DOING ANYTHING ON THE COMPUTER!!!

_____ **Step 1 - Before doing anything, start with your computer off. Then you will put either the Networking or WordStar system disk in the left-hand disk drive and you will put a Student Exercise disk in the right-hand disk drive.**

_____ **Step 2 - Turn on the computer and monitor. At A> type WS and then press <RETURN>. Then at the "OPENING MENU" type L the command to change the logged disk drive. Then type B: and press the <RETURN> key to activate the B drive.**

_____ **Step 3 - Next type D to open the document file. At the prompt "Name of File to Edit?" type MEMO and press the <RETURN> key.**

_____ **Step 4 - Now you are going to type a Memo to your instructor that you will be able to edit using the sophisticated editing features of a word processing package. Type the same note to your instructor that you typed earlier, but this time you will not need to press <RETURN> at the end of each line. This time allow the computer to decide when to break the line...this feature is called Word Wrap.**

Also, using the cursor movement keys you will be able to move up and down and left and right on a line in a document.

Here are some helpful hints to move the cursor around and edit your copy:

Cursor Movement

a.	Right one character	..... <CTRL> D	or →
b.	Left one character	..... <CTRL> S	or ←
c.	Up one line	..... <CTRL> E	or ↑
d.	Down one line	..... <CTRL> X	or ↓
e.	Top of Document	..... <CTRL> QR	or F9
f.	Bottom of document	..... <CTRL> QC	or F10

Deletions

a. Character under cursor ..... <CTRL> G
b. Character left of cursor..... <DEL>
c. Word to right of cursor ..... <CTRL> T
d. Entire line ..... <CTRL> Y

Insert on and off ..... <CTRL> V or <INS> key

Scrolling

a. Down a line at a time ..... <CTRL> W
b. Up a line at a time ..... <CTRL> Z
c Continuous up ..... <CTRL> QZ
d. Continuous down ..... <CTRL> QW

Center a line ..... <CTRL> OC

_____ Step 5- INSERTING AND DELETING - Use the cursor movement keys to move around the memo to correct errors. Insert spaces, words, delete spaces, lines and words as needed. Be sure you practice using the <INSERT> key to toggle both ON and OFF.

_____ Step 6 - ADD A NEW PARAGRAPH - At the bottom of the memo add a sentence that starts: "Our discussions so far made me realize that computers _____." Be sure to use the Word-wrap feature of WordStar and do not place a <RETURN> at the end of each line. Instead, keep typing steadily and watch WordStar adjust the lines.

_____ Step 7 - Now save your corrections with <CTRL> KD, SAVE--done.

!!!STOP, CONTINUE ON ONLY IF YOUR COMPUTER IS CONNECTED TO A PRINTER!!!

_____ Step 8 - Now print your new document by typing P from the "OPENING MENU", enter the name of your file MEMO and press <ESC> to activate the printer. You may end now, or continue--time permitting.

IF TIME PERMITS, YOU MAY WISH TO CONTINUE WITH THESE STEPS.

_____ Step 1 - CENTER TEXT - Center the two lines "To:" and "From:" by holding <CTRL> while you tap O and then C.

_____ Step 2 - BOLD PRINT - Make the words "To:" and "From:" bold-faced by placing the commands <CTRL> PB, BEFORE and AFTER the words to be made bold. (Be sure <INSERT> is ON).

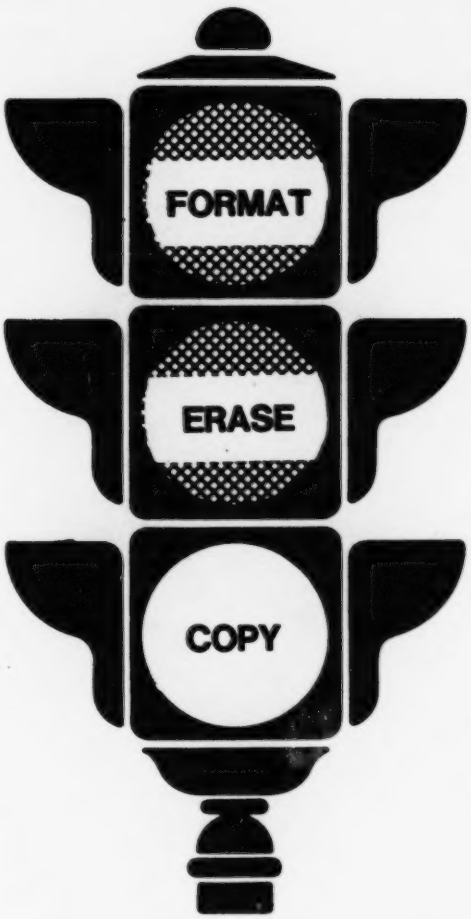
_____ Step 3 - MARKING AND MOVING A BLOCK OF TEXT - Using the function keys F7 and F8, you can mark a block of text to be moved wherever you wish. So now place your cursor at the start of the sentence you want to mark and press F7. Then move the cursor to the end of the sentence and press F8. You will see the text highlighted. Now move your cursor to some other place in your memo and hold <CTRL> while you tap K and V.

To reform the copy so it all fits in the margins, place your cursor at the beginning of the paragraph with copy out of place, and hold <CTRL> while you tap B. Press <CTRL> and B as often as you need to fill all the copy lines up.

NOTES ON EVOLUTION OF COMPUTERS

AND COMPUTER CATEGORIES

OPERATING SYSTEM



EXERCISE 6
PC-DOS PART 1 - USE OF THE OPERATING SYSTEM

_____ Step 1 - With your computer OFF, place the DOS diskette in the A drive (left-hand drive). Place your Exercise disk in drive B

_____ Step 2 - Turn on the computer and monitor.

_____ Step 3 - Find out what files are on the each diskette
For the A drive:
Type .....DIR <RETURN>

_____ Step 4 - To get a directory of the files on the B drive, first we need to change the prompt so at the A>
Type .....B: <RETURN>
Then at the B>
Type .....DIR <RETURN>

_____ Step 5 - Make a copy of the file called MEMO
Type at B>.....COPY MEMO MEMO2 <RETURN>

_____ Step 6 - Make more copies of MEMO
Type at B>.....COPY MEMO MEMO3 <RETURN>
COPY MEMO MEMO4 <RETURN>
COPY MEMO MEMO5 <RETURN>

_____ Step 7 - Again call up a directory
Type at B>.....DIR <RETURN>

_____ Step 8 - Change the name of MEMO4
Type at B>.....RENAME MEMO4 NEWNAME <RETURN>

_____ Step 9 - See if the new file is in the directory

_____ Step 10 - Erase MEMO5 from the disk
Type .....ERASE MEMO5 <RETURN>

_____ Step 11 - Check to see if it is gone from the directory

_____ Step 12 - Display the contents of MEMO on the screen
Type .....TYPE MEMO <RETURN>

_____ Step 13 - Now create a printout of your directory

!! BE SURE YOU ARE HOOKED TO A PRINTER!!

_____ Step 15 - First run a directory. Then hold <SHIFT> while you tap <PRT SCR> and everything on the screen will be printed on the printer.

HOMEWORK ASSIGNMENT

Look in the media (newspapers, magazines, TV shows, etc.) for mention of computer hardware, software, and peripherals. We recommend that it be something of particular interest to you. Present findings in Exercise 7.

EXERCISE 7

HOMEWORK REVIEW

Instructions:

To open a file:

With WordStar in the "A" drive and your Exercise Disk in the "B" drive, turn on the computer. This will be a chance to review WordStar as well as report on the homework.

1. Press L (to change the logged drive)
2. Answer the question by pressing B: <RETURN>
3. Press D (to open a document file)
4. Type filename (i.e. Homework) <RETURN>

Now type this:

To: (Name of Instructor)

From: (Your Name)

Since the last class I was able to find information about _____. I learned that _____ _____.

In addition, since the last class I have had questions about ____ _____.

Since the last class, my discussion with _____ about _____ was the most important since I started this program.

NOW SAVE AND PRINT THIS MEMO.

Instructions:

To save a file

1. Go to Block Menu <CTRL> K
2. Choose save operation desired

   Save and Done = D

Your document will be saved and the "OPENING MENU" will appear.

STOP! CONTINUE ONLY IF YOUR COMPUTER IS CONNECTED TO A PRINTER!

To print a file from "OPENING MENU"

1. Press P to print a file
2. Enter filename (i.e. Homework)
3. Press <ESC> to begin printing immediately

DOS Commands

The following are some of the commands that are frequently used in PC or MS DOS -- Disk Operating System.

COMMAND:	FUNCTION:
DIR	Displays on the screen a list of all the files on the disk. Variations:
	DIR/W — Displays a wide-screen listing
	DIR/P — Pauses the list one screen at a time
	DIR B: — Displays a list of the files on the disk in drive B:
COPY	Copies the file(s) that are specified to the same disk or to another disk. Examples of this command:
	COPY MEMO1 MEMO2 — Copy on the same disk
	COPY A:MEMO B: — Copy from drive A: to drive B:
ERASE	Erases from the disk the files that are specified. Examples of this command:
	ERASE MEMO — Erases from the same disk
	ERASE B:MEMO — Erases from disk in drive B:
FORMAT	Prepares a disk to be used by the computer. A DOS disk must be used for this command. Example of this command with DOS disk in drive A: and a new disk in drive B:
	FORMAT B: — Format the disk in drive B:
DISKCOPY	Copies the entire contents of one disk onto another disk. A DOS disk must be used to make this command work. Example of this command:
	DISKCOPY A: B: — Copies the disk in drive A: to the disk in drive B:
CHKDSK	Displays on the screen a status report of a disk and of the memory in the computer. A DOS disk must be used for this command to work. Example of this command:
	CHKDSK B: — Check the disk in drive B:

EXERCISE 8

DOS PART 2

With DOS in Drive A and your Exercise disk in Drive B practice the following DOS commands:

NOTE: FOLLOW ALL THESE COMMANDS WITH A <RETURN>!!

1. Run a directory of the Disk in Drive A.....A>DIR <RETURN>

2. Run a directory so that it pauses.....A>DIR/P <RETURN>

3. Run a directory so that is appears as
   a wide screen.....A>DIR/W <RETURN>

4. a. Run a directory of the disk in
      drive B.....A>DIR B: <RETURN>

   b. or,
      change the prompt from A> to B>.....A>B: <RETURN>

      Now, run a directory of drive B: with....B>DIR <RETURN>

5. See if MEMO is on disk B.....B>DIR MEMO <RETURN>

6. Look at all the files on disk B that
   start with M.....B>DIR M*.* <RETURN>
   (* stands for "any character" and is called
   a "wild card".

7. Now go back to the A drive.....B>A: <RETURN>

8. Look at all the files on disk A that
   start with W.....A>DIR W*.* <RETURN>

9. Look at all the Command files on
   the A drive.....A>DIR *.COM <RETURN>

10. Now, let's format a blank disk.....A>FORMAT B: <RETURN>
    Be sure DOS is in A drive and a new
    blank disk is in the B drive

11. Now let's create some back up copies of some of the files on your Exercise Disk by moving them onto your newly formatted diskette. That way you'll have 2 disks with the same files.....keeps data safe.

    Put Exercise Disk in A:

    Type.....A>COPY A:MEMO B: <RETURN>
    A>COPY A:BUDGET.WKS B: <RETURN>
    A>COPY A:HOMEWORK B: <RETURN>
    A>COPY A:EMPLOYEE.WKS B: <RETURN>

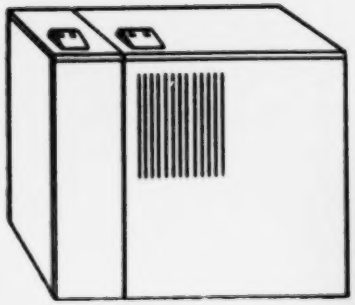
NOW PUT THE DOS BACK INTO THE "A " DRIVE

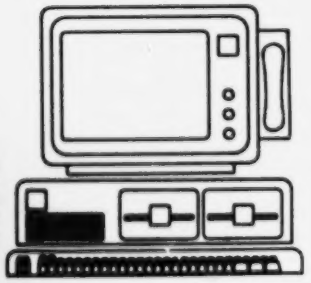
12. Check the amount of space left on your disk in drive B.....A>CHKDSK B:

13. Practice a Warm Boot again.....PRESS the <CTRL> and the <ALT> keys togetherand tap the <DEL> key.

14. Review the parts of a floppy disk and practice safe disk handling. Note the Write-Protect notch.

TELECOMMUNICATIONS





EXERCISE 9

"In-Search"

A Telecommunications Simulation

Directions:

_____ Step 1 - Start with the computer on

_____ Step 2 - Insert the In-search diskette in Drive A

_____ Step 3 - Perform a warm boot <CTRL> <ALT> <DEL>

_____ Step 4 - Once you see the opening screen, press the space bar until you see this:

Select an item by typing its number

1 Business Person
2 Market Researcher
3 Finance Person
4 Attorney
5 Doctor
6 Engineer
7 Scientist
8 Educator

9 Database Tour

Q Type Q to Quit the demo and return to DOS

Now, try searching in some of the data bases, by "playing" the role of one of the occupation areas indicated.

Here are some suggested questions you could try.

Business:

1 What do recent case studies on flexible working hours reveal about productivity and morale?

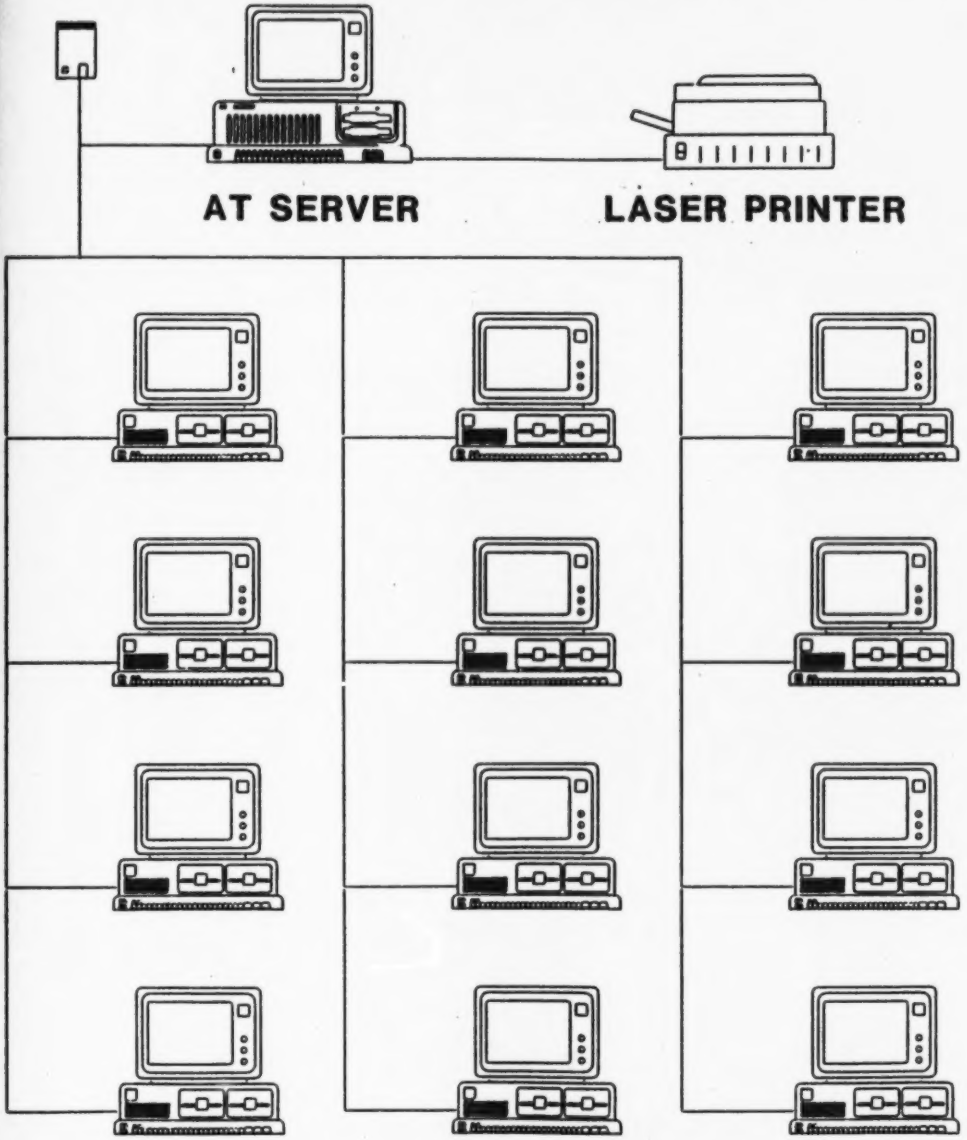
2 What "perks" are taxable as personal income?

Education:

1 What procedures are there for the identification of dyslexia in school children?

2 What is the student-teacher ratio at Laguna Beach High?

A DCCC LAB NETWORK



EXERCISE 10

NETWORKING EXERCISE

Using the network, you will bring up both WordStar and another software package called LOTUS 1-2-3, a spreadsheet package.

_____ Step 1 - Insert the networking diskette in Drive A.

_____ Step 2 - After the system boots and you see the A>, type WS.

_____ Step 3 - Once you see the "Opening Menu" of WordStar, you can Exit from the software by hitting the "X" key.

_____ Step 4 - Now we want to demonstrate that the network can serve more than one software application simultaneously. So the teacher will designate one half of the class to bring up Lotus 1-2-3 by typing 123 at the A>.

_____ Step 5 - Those of you still in WordStar can now bring up Lotus.

BUDGET

BUDGET

INCOME	January	February	March	April	May	June	TOTAL
Salary	2,000	2,000	2,000	2,000	2,100	2,100	12,200
Gifts	425	392	523	867	85	142	2,434
Interest	256	111	473	324	50	115	1,329
TOTAL	$2,681	$2,503	$2,996	$3,191	$2,235	$2,357	$15,963
EXPENSES							
Food	322	487	375	215	533	350	2,282
Rent	500	500	500	500	500	500	3,000
Clothes	211	984	175	250	465	325	2,410
Fun	213	875	123	164	623	55	2,053
TOTAL	$1,246	$2,846	$1,173	$1,129	$2,121	$1,230	$9,745
NET	$1,435	($343)	$1,823	$2,062	$114	$1,127	$6,218

EXERCISE 11

SPREADSHEETS

Activity: Read each numbered item through before doing it.

_____ Step 1 - Follow instructor's directions for starting up Lotus 1-2-3.

_____ Step 2 - To retrieve the budget worksheet, follow these steps:

KEY TO PRESS	EXPLANATION
/	Brings up the Menu
F	File
R	Retrieve (to retrieve a worksheet from the disk
Return	Brings up BUDGET worksheet

If you have any trouble with these steps, press the gray <ESC> key until all the menus are gone and start again from the beginning.

_____ Step 3 - When the budget worksheet is on the screen, move the pointer around the screen using the <ARROW> keys (cursor movement-pointer keys).

_____ Step4 - Enter the following values into the appropriate cells by following these steps:

a. Move pointer to the cell you wish to use
b. Type only the item for that cell
c. Press the <RETURN> key
d. Move pointer to the next cell you wish to use

	April	May	June
Salary	2000	2100	2100
Gifts	867	85	142
Interest	324	50	115
Food	215	533	350
Rent	500	500	500
Clothes	250	465	325
Fun	164	623	55

Watch the totals change as you enter the numbers.

_____ Step5- Save this spreadsheet on the disk.

KEY TO PRESS	EXPLANATION
/	Brings up the menu
F	File
S	Save
Return key	Save the worksheet
R	Replace the old worksheet that is on the disk

_____ Step6- There are 3 graphs that have been prepared based on the numbers in this spreadsheet. To see the graphs, follow these steps:

	KEY TO PRESS	EXPLANATION
6a.	/	Brings up the menu
6b.	G	Brings up the Graph menu
6c.	N	Name of Graph
6d.	U	Use

At this point, the following information will be displayed at the top of the screen:

Enter name of graph to make current:
EXPENSES INCOME NET

6e. Use the left and right <ARROW> keys to highlight the graph you would like to see: EXPENSES or INCOME or NET. Press the<Return> key and the graph you have selected will display on the screen.

Press the <SPACE> bar to return to the "GRAPH MENU". Follow Steps 6c. 6d. and 6e. to see a different graph.

_____ Step7- If you have enough time try changing the numbers to see the totals change and to see the graphs change. First, look at each graph to remember how it looks -- especially NET.

Then press the <ESC> key several times until there are no more menus at the top of the spreadsheet. Follow the steps in part 4 to change the values. Watch how the totals change. Follow the steps in part 6 to see the graphs again.

EMPLOYEE

EMP #	LAST	FIRST	DIVISION	SEX	SOC SEC #	SALARY	POINTS	TITLE
1001	Donovan	Virginia	Finance	F	263-78-1234	1400	8	Bookkeeper
1002	Cressey	Helen	Sales	F	129-63-3242	1100	3	Salesperson
1003	Holden	James	DP	M	422-18-3899	2100	2	Programmer
1004	Jones	Mary	DP	F	763-47-3744	4500	7	Supervisor
1005	Smith	Randolph	Admin	M	211-47-7332	8500	3	President
1006	Morgan	George	Finance	M	476-33-4878	3100	8	Vice Pres.
1007	Jefferson	Thelma	Admin	F	985-33-1932	800	3	Admin Asst
1008	Sayers	Vicki	Finance	F	498-48-8788	1400	2	Accountant
1009	Jaspers	Jerry	DP	M	122-93-9477	1500	7	Programmer
1010	Blackstone	Rodger	Shipping	M	399-31-1221	3300	3	Supervisor
1011	Wagner	Jerome	Shipping	M	433-90-0922	1200	1	Clerk
1012	Harmison	Janet	Shipping	F	488-20-1889	1100	4	Clerk
1013	Lyman	Marilyn	Training	F	878-12-2637	4400	9	Director
1014	Palmer	Marie	Sales	F	744-87-9221	3200	2	Salesperson
1015	Smith	Gert	Sales	F	324-26-9327	1400	5	Salesperson

-31

EXERCISE 12

DATABASE EXERCISE USING LOTUS 1-2-3

_____ Step 1 - Follow instructor's directions for starting up Lotus 1-2-3.

_____ Step 2 - To retrieve the EMPLOYEE data base, follow these steps:

KEY TO PRESS	EXPLANATION
/	Brings up the Menu
F	File
R	Retrieve

Use <ARROW> keys to move pointer to EMPLOYEE
Press <RETURN>

_____ Step 3 - When the EMPLOYEE data base is on the screen, move the pointer around the screen using the <ARROW> keys to see columns A - I.

_____ Step 4 - To sort the Employee records, followsteps:

KEY TO PRESS	EXPLANATION
/	Brings up the Menu
D	Data menu
S	Sort menu
P	Primary-Key for sorting

Use <ARROW> keys to move pointer to the column you wish to sort ie. column B to sort by Last name, column D by Division. When pointer is on correct column, press <Return>. Then press:

	A	Ascending order sort
OR	D	Descending order sort
	<RETURN>	Enter selection
	G	Go - perform the sort

Look at the records to see what happened.

_____ Step 5 - Follow the steps in #4 (above) to perform the following sorts:

Sex	Ascending
Salary	Descending
Last Name	Ascending
Points	Descending
Emp #	Ascending

EXERCISE 13

MAINFRAME ACTIVITY

_____ Step 1- Seated at a terminal, turn the terminal on ..... wait until the screen shows blocks at the bottom.

_____ Step 2 - Press F1 or if there is no F1 key go to Step 3.

_____ Step 3 - Press <ENTER> or <RETURN> key.

_____ Step 4 - At the :
type HELLO DEMO.DPR either in upper or lower case and press <ENTER>

_____ Step 5 - At the prompt "ENTER PASSWORD"
type LAB

_____ Step 6 - At the : type INDEX <ENTER>

_____ Step 7 - At the question "Do you need instructions?"
type Y and press <ENTER>

_____ Step 8 - At "continue" type Y to read all

_____ Step 9 - At the question "Would you like a list of categories?"
type Y and press <ENTER>
Read the categories.

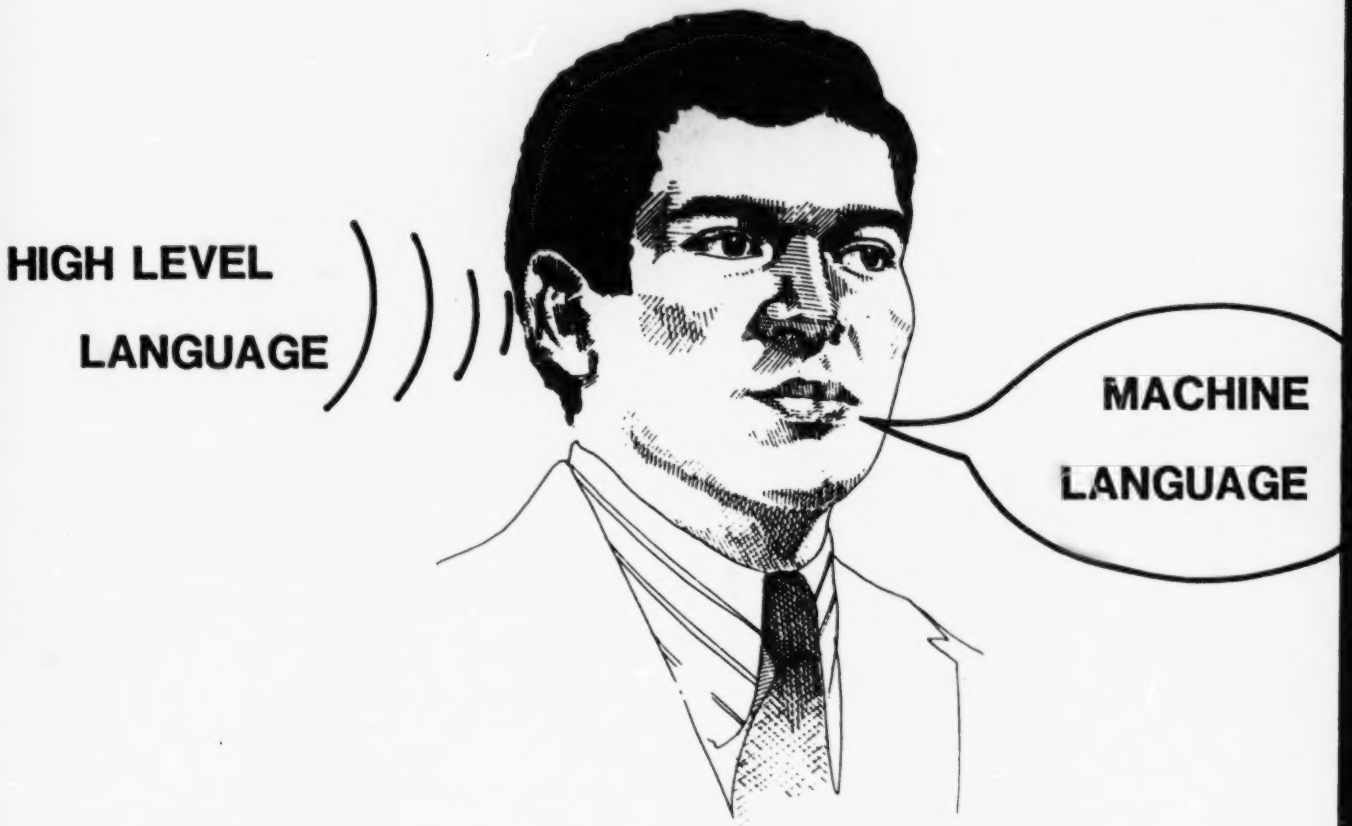
_____ Step 10 - At the prompt "Category?" type END <ENTER>

_____ Step 11 - At the prompt : type RUN TICTAC.GAMES.LIB and press <ENTER>. Now you can play.

_____ Step 12 - When done, at : type BYE

_____ Step 13 - Turn off the Terminal

Programming Languages



SAMPLE PROGRAMS IN BASIC, FORTRAN AND PASCAL

```
 30 REM     DELAWARE COUNTY COMMUNITY COLLEGE
 40 REM
 50 REM     SAMPLE BASIC PROGRAM  (ON HP 3000 7/8/86)
 60 REM
 70 REM     THE FOLLOWING PROGRAM IS INTERACTIVE AND INCLUDES
 80 REM     DATA VALIDATION TO INSURE THE USER HAS     ENTERED
 90 REM     THE REQUESTED INFORMATION.
110 REM
120 DIM D$[7,9],A$[7]
130 FOR X=1 TO 7
140   READ D$[X]
150 NEXT X
160 PRINT LIN(3)
170 PRINT "ENTER A # BETWEEN 1 AND 7.  THE DAY OF THE WEEK"
180 PRINT "CORRESPONDING TO THAT NUMBER WILL BE RETURNED."
190 INPUT A$
200 CONVERT A$ TO A,300
210 IF A<1 OR A>7 THEN DO
220   PRINT LIN(2)
230   PRINT A;" IS NOT A # BETWEEN 1 AND 7.  PLEASE RETYPE."
240   PRINT
250   GOTO 190
260 DOEND
270 PRINT LIN(2)
280 PRINT "THE DAY OF THE WEEK EQUAL TO";A;"IS ";D$[A]
290 GOTO 350
300 PRINT LIN(2)
310 PRINT A$;" IS NOT A NUMBER."
320 PRINT "RETYPE YOUR INPUT BY ENTERING A # FROM 1 TO 7."
330 PRINT LIN(2)
340 GOTO 190
350 STOP
360 DATA "SUNDAY","MONDAY","TUESDAY","WEDNESDAY","THURSDAY"
370 DATA "FRIDAY","SATURDAY"
380 END
```

```
C      DELAWARE COUNTY COMMUNITY COLLEGE
C             SAMPLE FORTRAN PROGRAM
C
C      THE FOLLOWING PROGRAM IS INTERACTIVE & INCLUDES DATA
C      VALIDATION TO INSURE THE USER HAS ENTERED THE req INFOR
C
      DIMENSION DAY(7)
C
      CHARACTER * 9 DAY
C
      INTEGER A
C
      DATA DAY/"SUNDAY","MONDAY","TUESDAY","WEDNESDAY",
     *"THURSDAY","FRIDAY","SATURDAY"/
```

```
      WRITE(6,2)
C
    2 FORMAT(///,1X,"ENTER A # BETWEEN 1 AND 7. THE DAY OF THE",/
     *       " WEEK EQUAL TO THAT NUMBER WILL BE RETURNED.")
C
   20 ACCEPT A
C
      IF(A.LT.1.OR.A.GT.7) WRITE(6,3)A
C
    3 FORMAT(//,1X,I1," ISN'T A NUMBER FROM 1 TO 7. TRY AGAIN.")
C
      IF(A.LT.1.OR.A.GT.7) GOTO 20
C
      WRITE(6,4)A,DAY(A)
C
    4 FORMAT(1X,"THE DAY OF THE WEEK EQUAL TO ",I1," IS ",A9)
C
      STOP
C
      END
```

```
PROGRAM SAMPLE_PASCAL(INPUT,OUTPUT);                    00001000
                                                        00002000
      (* DELAWARE COUNTY COMMUNITY COLLEGE *)           00006000
      (* SAMPLE PASCAL PROGRAM 7/8/86*)                 00007000
                                                        00008000
TYPE                                                    00009000
  STRING = PACKED ARRAY[1..9] OF CHAR;                  00010000
VAR                                                     00012000
                                                        00013000
  D : INTEGER;                                          00014000
  DAY : STRING;                                         00015000
                                                        00016000
BEGIN                                                   00017000
  WRITE('ENTER A NUMBER BETWEEN 1 AND 7.');             00018000
  WRITELN('  THE DAY OF THE WEEK');                     00019000
  WRITE('CORRESPONDING TO THAT NUMBER ');               00020000
  WRITELN('WILL BE RETURNED.');                         00021000
  READLN(D);                                            00022000
                                                        00023000
     CASE D OF                                          00024000
       1 : DAY := 'SUNDAY';                             00025000
       2 : DAY := 'MONDAY';                             00026000
       3 : DAY := 'TUESDAY';                            00027000
       4 : DAY := 'WEDNESDAY';                          00028000
       5 : DAY := 'THURSDAY';                           00029000
       6 : DAY := 'FRIDAY';                             00030000
       7 : DAY := 'SATURDAY';                           00031000
     END; (*CASE STATEMENT*)                            00032000
  WRITE('THE DAY OF THE WEEK CORRESPONDING TO ');       00034000
  WRITELN(D:1,' IS ',DAY:9,'.');                        00035000
END.                                                    00036000
```

EXERCISE 14

PROGRAMMING EXERCISE USING BASIC

With a DOS disk in drive A and your new Exercise Disk in B, do a warm boot to bring up the A>. Then type BASIC and hit <RETURN>.

_____ Step 1 - Let's see your name printed out by the computer.
Type: PRINT "<your name>" <RETURN>

_____ Step 2 - Type: PRINT 2+3 <RETURN>

_____ Step 3 - Now let's ask the computer to convert a Fahrenheit temperature of 75 degrees to a Centigrade temperature.
Type: PRINT (75-32)*5/9 <RETURN>

_____ Step 4 - To clear previous work.
Type: CLS <RETURN>

_____ Step 5 - Now here is a BASIC program with program statements that can be saved and run.
Type the following exactly as it appears here:

```
10    INPUT "Enter a Fahrenheit temperature (ENTER '0'
      to quit): ",X     <RETURN>

20    If X=0 then Stop    <RETURN>

30    PRINT "The Centigrade Temperature is:", (X-32)*5/9
     <RETURN>

40    GOTO 10    <RETURN>
```

_____ Step 6 - NOW.....save this by typing

```
SAVE "B:TEMP"    <RETURN>
```

_____ Step 7 - Now RUN it by pressing (F2)

_____ Step 8 - When you're finished type "0". After "ok",
Type: SYSTEM and <RETURN>.

SAMPLES OF PRINTER STYLES

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a Daisy Wheel printer in various typestyles.

Hello! Welcome to a sample of print styles. This is a **dot matrix** printer in data processing type, elite size.

Hello! Welcome to a sample of print styles. This is a **dot matrix** printer in data processing type, pica size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in correspondence quality type, elite size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in correspondence quality type, pica size.

Hello! Welcome to a sample of print styles. This is a dot matrix printer in correspondence quality type, double size.

Hello! Welcome to a sample of print styles. This is a Dot Matrix printer in data processing type, condensed size.

Hello! Welcome to a sample of print styles. This is a **Dot Matrix** printer in data processing type, condensed size.

* Most of this manual was printed on a laser printer.

APPENDIX A:

EXERCISE 12

DATABASE USING dBASE III PLUS

(***Follow your teacher's instruction to start dBase***)

I. Instructions for using the menus

A. Press F2 key to begin the ASSISTANT. At the top of your screen is the menu bar. Use the <-- and --> key to move back and forth across the menu bar to open one of the menus.

B. Below each menu bar is a pull-down menu for the menu selection on which you are currently stationed. Use the and ^ key to move up and down through the menu options. Press <RETURN> to select the desired menu option.

C. On some pull-down menu options a submenu appears. Use the and key to move up and down through the submenu options. Press <RETURN> to select the desired submenu option.

II. Start

A. Change the default disk

1. Open the Tools Menu (Use ← or →)
2. Select Set drive (Use ↑ or ↓)
3. Press <RETURN>
4. Select B: drive where you want to store data file. (Use or)
5. Press <RETURN>

B. Create the Employee Database File

1. Open the Create Menu (Use ← or →)
2. Select Database file (Use ↑ or ↓)
3. Press <RETURN>

4. Select the drive where you want to store your new file.
(Use B:)

5. Press <RETURN>

Your are prompted:
"Enter the name of the file:"

6. Type EMPLOYEE. If you make a mistake use the Backspace key.

7. Press <RETURN>

The database file structure table appears. This is where you enter the structure by typing in labels for:

- Field name
- Type
- Width
- Decimals (for numeric types only)

See Chart A for sample of the Employee Field Structure and proceed.

8. Type Firstname and press <RETURN>

9. Type C

10. Type 15 and press <RETURN>

11. Continue, using Chart A as a guide.

12. <RETURN> twice to end structure.

13. At "input data records now?" - answer "Y"

C. Adding employee records to the database file

1. Open the Update Menu (Use ← or →)

2. Select Append (Use ↑ or ↓)

3. Press <RETURN>

4. A blank template appears on the screen. The fieldnames you just entered also appear on the screen. Next to each name is space to enter data equal in length to the width you assigned each field.

Use Chart B for steps 5-10

5. Type Virginia and press <RETURN>

6. Type Donovan and press <RETURN>

7. Type Finance and press <RETURN>

8. Type F

9. Type 263-78-1234

10. Type Bookkeeper and press <RETURN>

11. Repeat steps 5-10 for each employee record found in Chart B.

12. When all employee records have been entered, hold down the <CTRL> key and press the <END> key.

13. Note: If <CTRL> <END> doesn't work, press <RETURN> key 3 or 4 times till it does.

D. View All Employee Records

1. Open the Retrieve Menu (Use ← or →)

2. Select List (Use ↑ or ↓)

3. Press <RETURN>

4. Select, Execute the Command (Use ↑ or ↓)

5. Press <RETURN>

6. You are prompted

Direct the output to the printer? [Y/N] ____

Press N

7. Your data should display on the screen

E. View Employee Records for Finance

1. Open the Retrieve Menu (Use ← or →)
2. Select List (Use ↑ or ↓)
3. Press <RETURN>
4. Select, Build a search condition (Use ↑ or ↓)
5. Press <RETURN>
6. Select Division (Use ↑ or ↓)
7. Press <RETURN>
8. Select = Equal To (Use ↑ or ↓)
9. Press <RETURN>
10. Type Finance (If you used capitals originally, then you must use caps now)
11. Press <RETURN>
12. Select No more conditions (Use ↑ or ↓)
13. Press <RETURN>
14. Select, Execute the command
15. Press <RETURN>
16. Press N
17. Your data should display on the screen
18. Try other conditions. (i.e. sex and title)

CHART A:

Employee Field Structure

Field Name	Type	Width	Decimals
Firstname	C	15	
Lastname	C	15	
Division	C	10	
Sex	C	1	
Socsec	C	11	
Title	C	15	

CHART B:

Personnel Data

FIRST	LAST	DIVISION	SEX	SOC SEC #	TITLE
Virginia	Donovan	Finance	F	263-78-1234	Bookkeeper
Helen	Cressey	Sales	F	129-63-3242	Salesperson
James	Holden	DP	M	422-18-3899	Programmer
Mary	Jones	DP	F	763-47-3744	Supervisor
Randolph	Smith	Admin	M	211-47-7332	President
George	Morgan	Finance	M	476-33-4878	Vice Pres.
Thelma	Jefferson	Admin	F	985-33-1932	Admin Asst.
Vicki	Sayers	Finance	F	498-48-8788	Accountant
Jerry	Jaspers	DP	M	122-93-9477	Programmer
Rodger	Blackstone	Shipping	M	399-31-1221	Supervisor
Jerome	Wagner	Shipping	M	433-90-0922	Clerk
Janet	Harmison	Shipping	F	488-20-1889	Clerk
Marilyn	Lyman	Training	F	878-12-2637	Director
Marie	Palmer	Sales	F	744-87-9221	Salesperson
Gert	Smith	Sales	F	324-26-9327	Salesperson

INTRODUCTION TO MICROCOMPUTERS - A COMPETENCY-BASED APPROACH

DELAWARE COUNTY COMMUNITY COLLEGE

JULY 1986

DIRECTIONS:

REMOVE the answer sheet and turn to side one and fill out your identification number (ss#), today's date, the code for this class, and your name. Please read the marking directions on the answer sheet. Mark the letter corresponding to the one best answer for each question. There is no penalty for guessing. DO NOT waste time on difficult questions. You may answer questions even when you are not perfectly sure your answers are correct, but you should avoid wild guessing.

d. 1. An example of a peripheral device is a(n):

a. CPU
b. Floppy diskette
c. Application
d. Printer

a. 2. Select the key or keys required for a "Warm Boot" on an IBM PC

a. Ctrl-Alt-Del
b. Ctrl-Shift-Ins
c. Ctrl-Alt-Enter
d. Ctrl-Shift-Enter

d. 3. It is wrong to handle a diskette by the:

a. Label
b. Right-hand edge
c. Left-hand edge
d. Exposed surface

a. 4. The fundamental difference between application program files and data files is:

a. Applications program files act upon data files
b. Data files act upon application program files
c. There is no difference
d. Both "A" and "B"

b. 5. The most common and practical technique in protecting data from damage and theft is:

a. Formatting the diskette
b. Backing up the diskette
c. Storing the diskette in a special container
d. Storing the diskette in a disk jacket

b. 6. An application most suited for preparing letters and memos is:

a. Graphics
b. Word processing
c. Spreadsheet analysis
d. All of these

d. 7. An <u>inappropriate</u> manner of handling and/or caring for a floppy diskette is:

a. Placing it near a telephone
b. Labeling the diskette with a ball point pen
c. Touching the disk surface itself
d. All of these

b. 8. "Booting" a computer refers to:

a. Unpacking the hardware and plugging it in
b. Loading and starting the operating system from the disk
c. Attaching cables to the back of the computer
d. None of the above

d. 9. To prepare a new diskette for use, it must be first:

a. Catalogued
b. Cleaned
c. Checked
d. Formatted

a. 10. The keydboard is used for:

a. Input
b. Output
c. Storage
d. Processing

b. 11. The computer monitor (CRT) is used for:

a. Input
b. Output
c. Storage
d. Processing

b. 12. A printer is used for:

a. Input
b. Output
c. Storage
d. Processing

d. 13. The CPU is used for:

a. Input
b. Output
c. Storage
d. Processing

c. 14. An example of software is:

a. Modem
b. CPU
c. Operating System
d. Floppy Diskette

d. 15. An example of hardware is:

a. Database
b. Spreadsheet
c. Operating System
d. CPU

For each data processing need listed in items 16 through 18, choose the most appropriate application:

c. 16. Keeping track of clients, patients or customers:

a. Graphics
b. Work Processing
c. Data Base Management
d. Spreadsheets

d. 17. Financial analysis, budgets or accounting:

a. Graphics
b. Word Processing
c. Data Base Management
d. Spreadsheets

b. 18. Editing documents, letters or school papers:

a. Graphics
b. Word Processing
c. Data Base Management
d. Spreadsheets

a. 19. Function keys are primarily designed to:

a. Provide an easy method of accessing a program command
b. Make the keyboard wider
c. Move the cursor
d. Perform mathematical operations

a. 20. The number/lock key provides:

a. Access to number or cursor movement keys
b. Access to numbers and the scrolling mechanism
c. Easy access to numbers only
d. None of these

a. 21. The "*" and "/" keys can be used for:

a. Multiplication and division
b. An asterisk and subtraction
c. Addition and division
d. An asterisk and a tab

a. 22. The primary difference between processing on a minicomputer vs. a microcomputer is:

a. The volume of data and speed of the processing required
b. The ability to process data accurately
c. The types of applications that are available
d. The ease of using a particular application

d. 23. Wordwrap is a feature of a software program that:

a. Ends lines evenly at the margin
b. Makes it difficult to edit
c. Is a writing tool only for experts
d. Means you don't have to enter a carriage return at the end of each line.

c. 24. The key difference between electronic and mechanical devices as they relate to processing data is:

a. Mechanical devices cannot do data processing
b. Electronic devices cannot do data processing
c. The speed of the processing of data
d. Accuracy of the processing of data

c. 25. MailMerge is:

a. Postal delivery via electronic mail
b. Optical recognition of zipcodes
c. The combination of two files into one
d. None of the above

b. 26. The command "RUN" in BASIC is used to:

a. Boot up a computer
b. Execute a particular program
c. List the statements in a program
d. Store program statements

c. 27. The software application type best suited for searching and reorganizing information is:

a. VCR
b. Spreadsheet
c. Database management
d. Word processing

d. 28. A definition for "Operating System" is:

a. Software that controls specific user-related data processing tasks
b. A multiple-user system designed for medical institutions
c. The interconnection of all hardware components of the system
d. A program that supervises and controls the computer system's resources

c. 29. An software application most suited for number manipulation and calculation via columns and rows is called:

a. Word processing
b. Graphics
c. Spreadsheet
d. None of these

d. 30. An algorithm can be best described as:

a. A computer program
b. A flowchart
c. A set of answers
d. A set of instructions to solve a problem

31.

a. 32. Identify a programming language commonly associated with business computing:

a. COBOL
b. LOGO
c. FORTRAN
d. BASIC

c. 33. An element of a database structure is a(an):

a. Algorithm
b. Flowchart
c. Field
d. Program

c. 34. The command to view the directory on an IBM PC screen under PC-DOS "a page at a time is":

a. P.DIR
b. PAGE
c. DIR/P
d. LIST.PG

d. 35. An incorrect file name as defined under PC-DOS is:

a. Any name containing a "*"
b. Any name longer than 8 characters with a 3 character extension
c. Any name containing a blank
d. All of the above

b. 36. An software application which uses charts for reporting information is:

a. User software
b. Graphics software
c. Systems software
d. Telecommunications software

c. 37. Which of the following is <u>incorrect</u> for an ERASE command:

a. ERASE FILENAME.EXT
b. ERASE F*.*
c. FILENAME.EXT ERASE
d. ERASE *.*

a. 38. Which of the following is <u>incorrect</u> for a COPY command:

a. COPY A: B:
b. COPY A:FILENAME.EXT B:
c. COPY A:FILENAME.EXT B:FILENAME.EXT
d. COPY NAME1 NAME2

b. 39. Which of the following is <u>incorrect</u> for a RENAME command:

a. RENAME A:FILENAME.EXT NEWNAME.EXT
b. RENAME *.*
c. RENAME NAME1 NAME2
d. RENAME B:OLDNAME.EXT NEWNAME

40.

a. 41. Which of the following is <u>incorrect</u> for a TYPE command:

a. TYPE A*.*
b. TYPE FILENAME.EXT
c. TYPE B:FILENAME.EXT
d. TYPE MEMO

b. 42. Future trends in computer development seem to indicate that the next generation of computers will:

a. Replace all humans on the assembly line
b. Help us to be more productive
c. Help us to be less productive
d. Create havoc for business management

c. 43. Differences between microcomputers and minicomputers are diminishing because of advances in:

a. The interchangeability of software packages
b. Artificial intelligence
c. Circuit technology
d. Telecommunications

d. 44. The primary difference between networked and stand-alone systems is:

a. Networks allow data processing, stand-alone's do not
b. Networks require operating systems, stand-alone's do not
c. Stand-alone's are more efficient
d. Networks allow multiple users concurrent access; stand-alone's do not

d. 45. The role of an operating system is(are):

a. To be the master controller of the total computer system
b. To peform scheduling, controls, loading and program call-up functions for the system
c. To direct the loading of input, execution of processing and unloading of output for the system
d. All of the above

d. 46. System security is primarily concerned with:

a. Keeping equipment in working order
b. Updating software
c. Training users
d. Insuring access to the computer and its data is by authorized personnel

c. 47. The following is NOT necessary to support computer operations in telecommunications:

a. Terminal and host
b. Modem
c. Hardcopy output device
d. A telephone line or the equivalent

a. 48. Multiple user tasks performed concurrently describes:

a. Timesharing
b. A disk drive
c. A CPU
d. A batch file

c. 49. Which of the following is not a microcomputer operating system:

a. DOS
b. CP/M
c. Lotus 1-2-3
d. UNIX

b. 50. An example of special purpose computing is:

a. Batch systems
b. Computer assisted design (CAD)
c. Data processinge
d. On-line systems

For items 51 through 57, select the best description from the list provided:

d. 51. dBase
   a. Programming language
   b. Spreadsheet program
   c. Word processing program
   d. Database program

c. 52. WordStar
   a. Programming language
   b. Spreadsheet program
   c. Word processing program
   d. Database program

b. 53. Lotus 1-2-3

   a. Programming language
   b. Spreadsheet program
   c. Word processing program
   d. Database program

a. 54. BASIC

   a. Programming language
   b. Spreadsheet program
   c. Word processing program
   d. Database program

a. 55. All of the following operating systems commands are used to handle files, EXCEPT:

   a. FORMAT
   b. COPY
   c. RENAME
   d. ERASE

b. 56. System configuration may be defined as:

   a. The software that is used in a computer
   b. The hardware that is used in a computer
   c. The printer that is used in a computer
   d. The CPU that is used in a computer

d. 57. A definition of "System" is:

   a. Part of the computer that interprets and performs instructions
   b. A type of software developed to perform specific tasks, as well as, general-purpose maintenance routines
   c. Everything that plugs into the CRT
   d. The organization of elements to perform tasks and accomplish goals

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